



ISSUE OF MARCH, 1949

AMERICAN
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MONTHLY

Join the 1949 drive against accident

AMERICAN GAS ASSOCIATION

420 LEXINGTON AVENUE • NEW YORK 17, N.Y.

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January 17, 1941

The President
Member Gas Company

Dear Sir:

This letter is being written to you personally as it is concerned with a subject of greatest interest to the gas industry.

In 1947 the gas industry reached an 18-year high in the frequency of lost-time accidents. In other words we are about where we were in 1930 in the matter of accident frequency. Further, the gas industry ranked 30th among 40 major industries in 1947 - an increase from 26th place in 1946. I am sure you will agree that we should make every effort to stop this rising curve of industrial accidents in order to -

- 1 - conserve experienced personnel.
- 2 - reduce compensation and medical costs.
- 3 - avoid reduction in or actual loss of plant facilities in these times of inflated replacement costs and acute material shortages.
- 4 - maintain good relations with employees.
- 5 - maintain good public relations and widespread acceptance in this period of stress, strain and potential labor unrest

A review of the Accident Prevention Committee reports shows companies both large and small, with consistently better than average rates. Is these companies unquestionably the top executives make safety their personal responsibility. May I suggest that you call in your top subordinates and the safety director for an hour's discussion of this most serious problem.

The Accident Prevention Committee has set a goal of 25% reduction in frequency and severity rates for 1949.

we can meet this
Robert W. Leader

Robert W. Hendee
President

....The only tangible approach beyond our present efforts seems to be through making the supervisors more conscious of their responsibility for safety.

L. J. ECK
Vice-President &
Assistant General Manager
Minneapolis Gas Company

I am in agreement...that all of us in this industry must do something to stop industrial accidents.

R. G. TABER
President
Atlanta Gas Light Co.

...I know of no way to improve this record substantially, except for top management to indicate a real desire for its improvement....I am bringing your letter to the attention of our Executive Safety Committee.

E. L. GODSHALK
President & General Manager
South Carolina Power Company

...We believe that the only way that accident prevention can successfully be applied is by continuous attention, all the way up and down the line, all the time.

TOM HAYES
Director of Personnel and
Public Relations
Milwaukee Gas Light Company

The only way to achieve the goal you have set, in my opinion, is to impress upon my employee the importance of the safety field. The planning and execution of every task performed must be the aim of every supervisor. This must be kept alive and stimulated at times by every device at our disposal.

CLIFFORD E. PARK
Chairman of the Board
President
The Brooklyn Union Gas Co.

... We are again pleased to cooperate with your program and are planning a similar type of presentation to our executives and personnel during the ensuing year.

H. P. NAGEL
Assistant Secretary
Republic Light, Heat and
Power Company, Inc.



Probably the most important and one of the most timely articles this month is the presentation of gas house heating load characteristics by Constantine Bary—outstanding expert on rate matters. It is hoped that Mr. Bary's comprehensive analysis will stimulate more companies to collect valuable load research data. . . . A major portion of this issue is devoted to promotional plans and activities at a time when concerted efforts are required to meet the demands of a changing national market. . . . The scope of the automatic gas water heating drive has been broadened and intensified. Numerous long-range programs are being studied by the Association's General Promotional Planning Committee. A new spring campaign promoting domestic gas range sales is ready for the opening push, and a four-day workshop has shown new ways for home service to fit into company and community relations. Proof of wide support for the 1949 drive to reduce accident rates is demonstrated dramatically on the inside cover of the *MONTHLY*. . . . Thus the winter season ends with the industry poised for the most energetic spring schedule in its history. Sparked by the powerful Promotion, Advertising and Research Program, strenuous efforts will be made to attain still higher levels of service to customers and country.

JAMES M. BEALL
EDITOR
JAC A. CUSHMAN
MANAGING EDITOR

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THE *MONTHLY* IS INDEXED BY THE INDUSTRIAL ARTS INDEX

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A.G.A. spurs water heating drive

A PAR activity

From coast to coast the gas industry is rolling up its sleeves and going out to sell automatic gas water heaters and automatic gas water heating as it has never sold them before. The million-dollar drive will gain full momentum beginning May 7 with the appearance of a four-color, two-page advertisement in the *Saturday Evening Post* sponsored by the American Gas Association.

During 1949, the Association will devote \$110,000 of its advertising budget for the year to publish four-color advertisements on automatic gas water heaters. This amount is in addition to approximately \$600,000 to be spent on extending the coordinated automatic gas range campaign that proved so successful in 1948. The pretested copy in the A. G. A. water heating advertisements will feature themes based on results of a survey completed for the Association by Elmo Roper. Basic sales appeals indicated by that survey are automatic features, dependability, economy, cleanliness, the superior fuel-gas, and construction.

Dominant space and color, striking art and hard-hitting copy will characterize the water heater campaign, coordinated with the greatest water heater promotion and sales contest ever staged by water heater manufacturers under auspices of Gas Appliance Manufacturers Association. With two million automatic gas water heater sales as the goal, with \$70,000 in prizes including two Buick sedans, and with all gas utility companies, distributors, dealers and LP-gas operators backed up by 23 leading water heater manufacturers, the advertising program will coincide with heavy point-of-sale promotion throughout the year.

Page advertisements, following the opening A. G. A. spread in May, will appear in June issues of *American Home*, *Better Homes & Gardens*, and *House Beautiful*; in the September issue of *Better Homes & Gardens*; in the September 17 *Saturday Evening Post*; and in the October issue of *House Beautiful*. Total impressions will be 18,000,000.

The opening advertisement in the *Saturday Evening Post* will feature an original New Freedom Gas Kitchen—laundry

combination. The main heading will be "Transforms Your Whole Way of Living for Only a Few Cents a Day." The second advertisement will be entitled "Now! A Million Dollars Worth of Convenience for a Few Cents a Day!" The third and last insertion has not been completed. The copy in all advertisements will stress the most effective competitive selling points automatic gas water heaters have to offer. Promotion of the lead-off advertisement in the *Saturday Evening Post* among 40,000 water heater dealers and among all member companies of the Association is planned by the National Advertising Committee.

Twenty-three leading water heater manufacturers throughout the country will spend an estimated \$450,000 in national consumer magazine advertising, while local advertising by gas utilities, distributors, dealers and LP-gas companies will bring total expenditures to more than one million dollars. During the campaign, for the first time, national advertising by A. G. A. and manufacturers will approach parity with that of electric water heater manufacturers.

As another indication of the emphasis which the Association is placing upon automatic gas water heating, the A. G. A. Residential Gas Section is organizing a new gas laundry equipment committee to help promote increased sales of automatic gas clothes dryers. Plans to initiate this new group are a direct result of a gas industry sales and promotional survey which indicated that 100 gas companies comprising more than 9½ million meters are currently promoting automatic gas clothes dryers.

In one area alone, the Pittsburgh Group companies in The Columbia Gas System, Inc., are employing 298 salesmen to sell gas-fired clothes dryers. Reports from eight sales districts show that the companies reached 99.3 percent of their sales quota in a vigorous, old-fashioned gas appliance sales campaign conducted for this new product during October and November 1948.

The Association's gas laundry equipment committee is expected to meet in the spring to prepare a nationwide gas laundry dryer sales and promotional campaign. Committee

◀ Four million gallons of water in giant gas holder of The Cincinnati Gas and Electric Company make a small "lake" for inspection crew during regular ten-year servicing. Photo by C. J. Ewald

membership will consist of a gas company sales executive as chairman, in addition to gas company sales executives from utilities which have been active in promoting automatic gas clothes dryers. Other members will include representatives of the major gas laundry dryer manufacturers, the Gas Appliance Manufacturers Association, and home service.

Early returns from the Gas Appliance Manufacturers Association indicate that water heater manufacturers are alert to the waiting market in this field and are making strong efforts to make this an outstanding sales year for automatic gas water heaters. Stanley C. Gorman, sales promotion director for the "Court of Flame" automatic gas water heater sales campaign, reports that the drive has received so much support and enthusiasm

from utilities to date that the first broadside was exhausted one month after the contest started.

The "Court of Flame" promotion campaign is designed not only to promote gas water heater sales through all types of outlets, but also to acquaint dealers and customers with the need for larger sized automatic gas water heaters to supply the increased demand for hot water created by automatic gas clothes washers, dishwashers, and the growing appreciation and demand of the public for ample supplies of hot water in the home.

On or around March 5, a comprehensive, practical portfolio will be supplied to all gas utilities with further details and suggestions for local tie in with the national effort. This portfolio will contain plans for utilities to set up their in-

dividual sales contests for salesmen or dealers. A mat service of newspaper advertisements, featuring the new "Court of Flame" symbol of quality will be included in addition to prize catalogues, window display pieces, sound slide films, and other promotional aids.

Due to the fact that several utilities have indicated a desire to register (their respective districts or divisions) for competition in the "Court of Flame" campaign, and to enable them to compete according to the number of meters which these districts and/or divisions serve rather than as one consolidated group, the following modifications have been made in the contest rules:

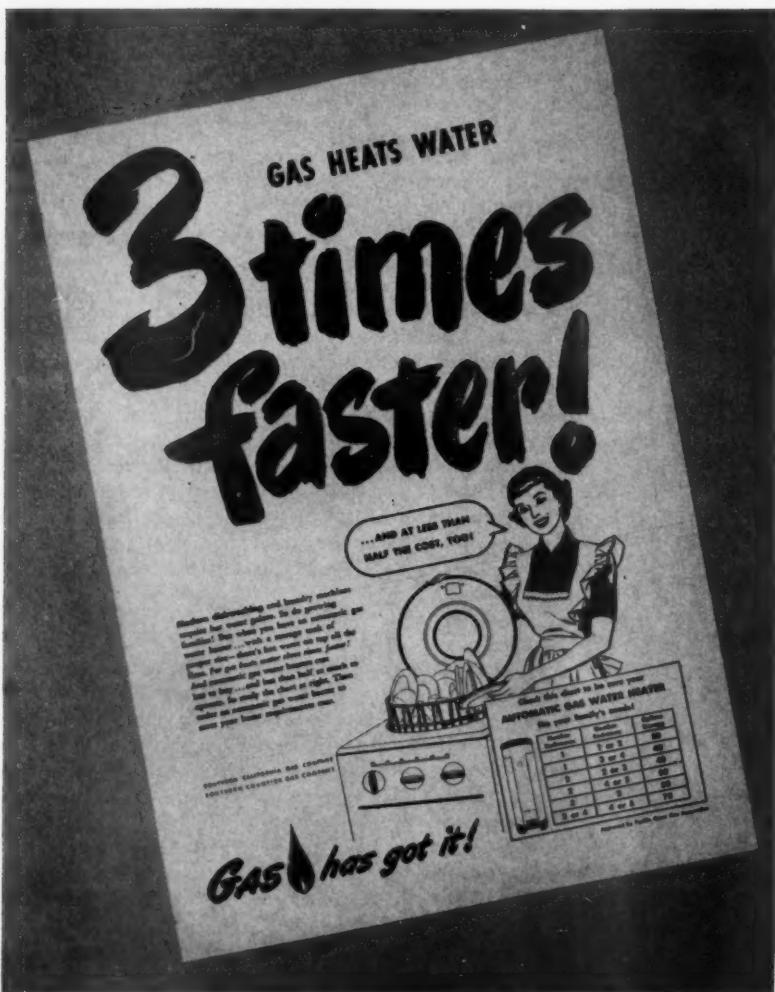
"You may register your company in one of the six contest meter classifications, or you may elect to enter your districts and/or divisions individually according to the number of meters in each of these separate districts or divisions. If you choose the latter course, you then compete for the "Court of Flame" trophy award with other utility companies on the basis of the meters served by these individual districts and/or divisions.

"If you elect to enter your company by districts and/or divisions, be certain to fill out, and mail to us, a registration blank, or advise us by letter, detailing each of your districts and/or divisions. Advise your salesmen of the districts involved and have them designate their district, corresponding to your notification to us, on each tag which they fill out and mail to us to assure proper prize award credits on our records."

"Like the tortoise and the hare we cannot tarry for a moment to take a nap lest our competition, like the tortoise, may easily slip past us and win the sales race in 49," Mr. Gorman stated.

"Some very interesting figures were developed recently, throwing light on the number of companies manufacturing water heaters for both fuels, gas and electricity. Seventy-two manufacturers make approved gas water heaters of which 11 make electric heaters also. There are 60 other manufacturers who make electric water heaters exclusively.

"Consider these figures. In 1939, 500,000 gas automatic water heaters were sold, and in this same year 102,000 electric storage water heaters were sold—a ratio of five to one in favor of gas. In 1948, 1,800,000 automatic gas water heaters and (Continued on page 37)



An increasing volume of advertisements such as this one by Southern California Gas Company and Southern Counties Gas Company is expected to feature automatic gas water heating in 1949

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*"The best way to learn
about mankind is to study man"*

Human relations— forgotten frontier

By LOUIS RUTHENBURG

President, Servel, Inc.,
As told to Larston D. Farrar
FORBES Magazine of Business

On the basis of 30 years in industry I am sure that, if I had known at the beginning what I know now, I would have spent much more time and energy on the problems of human relations. By "human relations" I mean labor-management relations, a study of why men act as they do—either singly or in groups, both for good and evil—in and out of my plants; human relations as they impinge on every facet of production and as every factor in the plant affects them.

A great scholar once remarked that the best way to learn about mankind is to study man. Basically, the big problems we have faced in industry have been, are, and will be the problems revolving around man's relationship to man. Great scientific and engineering developments lie ahead. No doubt the potentials of material progress in the future are greater than those of the past;

Photo at top of this page by Collier, courtesy Standard Oil Co. (New Jersey).

but these potentials will come to naught unless we make tremendous strides in the solution of fundamental problems in the field of human relations. It is the important unexplored frontier of our time.

A young man, just starting up the ladder of success, can be aware of no more important problem. He should keep human relations in mind as much as new inventions, new marketing techniques, or the winning of a profit.

If there be industrialists who think they can be isolationists and can wash their hands of general social, political, and economic problems by simply treating their own workers fairly, let them ponder what has happened in many a nation enveloped with totalitarianism. Every industrialist has a responsibility not only to keep his own house in order, but to contribute ideas, energy, and whatever he has to offer in the larger fight for freedom and education and enlightenment all over America—and, indeed, all over the world.

We industrialists have perfected the mechanical techniques of production. These, we have seen, could be used as readily in Moscow as in Chicago. We have been able to set up bookkeeping organizations that can tell us in ten minutes the net worth of our com-

panies; we have been able to install material controls and inventory controls sufficient to keep check on every last spare part in any of a dozen, or a hundred, far-flung factories. But these things can be duplicated in any land, whether free or filled with slave-labor.

We have not learned how to win the confidence of our workers, who may doubt everything we say. Many of them, as we know well, act *not* on what we urge, think not on the things we hope they will but act and think on what they are told by leaders determined to wreck our business, and our American system.

We have learned much about processes that will prevent materials from deteriorating under extremes of hot or cold weather. But we have not learned anything at all, relatively, about techniques that will keep men from allowing their minds to be subjected to decadent economic thinking. We have learned how to make steel so hard as to defy any kind of punishment to which it could be put.

But we have failed in developing programs that will make our employees, of their own will, stand unitedly and fight against either man or philosophies that wreck their faith in America, could wreck the industry that has given them life and succor, (*Continued on page 29*)



Chairman Cuthrell (left); and Charles W. Person (right), with J. J. Quinn who reported a continuing large volume of local tie-in advertising by member utilities, manufacturers and dealers backing the Gas Has Got It campaign



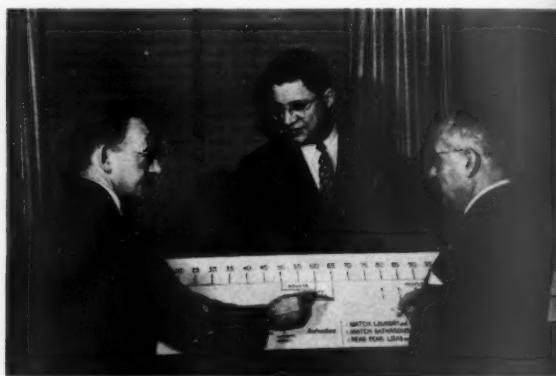
F. W. Williams (left), L. M. Feigel, Stanley Hobson and C. H. Horne studying plans for four booklets on gas ranges, water heating, New Freedom Gas Kitchens, and home laundries which will be prepared for gas industry



H. P. Morehouse (left), H. Carl Wolf, F. X. Mettenet, C. C. Barnes and Harold Massey, exchanging ideas to be used in portfolio which will announce the gas industry's new campaign promoting automatic gas water heating



R. M. Perkins (left), R. J. Vandagriff, F. T. Rainey and R. A. Malony examining new film strip "How We Get Our Gas." An expenditure was voted for two strip films on ranges and hot water uses to be shown in schools



Harold Massey, L. M. Feigel and J. J. Quinn examining novel slide rule for sizing of gas water heaters. The A.G.A. Water Heating Committee received authorization to prepare 50,000 of these rules for the industry



H. Vinton Potter and John W. West, Jr., discussing results of the gas water heating survey with Mr. Cuthrell. The gas industry will launch a million-dollar automatic gas water heating campaign later this spring



Informal interplay of ideas between sessions. Groups such as this one took advantage of short breathing spells to discuss further some of the major items which were presented at the meeting and endorsed in principle



Committee close-up

General Promotional Planning group builds a long-range program

A PAR activity

An unusually active promotional program for the remainder of 1949 and early part of 1950 received the go-ahead signal during a recent meeting of the Association's General Promotional Planning Committee at A. G. A. headquarters in New York. It was the group's first meeting of the new year.

Spurred in its discussion by Chairman H. H. Cuthrell, an impressive array of talent from utilities and manufacturer companies put the finishing touches on a half dozen new or extended campaigns and scheduled an even larger number of plans for further study.

Before the group adjourned, J. J. Quinn, chairman, National Advertising Committee, made an eloquent plea for closer tie-in between work of the Residential Gas Section and the national advertising program.

A small mountain of notes, together with committee action on 23 separate proposals, attested to the fact that the promotional "eyes, ears and brains" of the industry are acutely aware of the buyers' market and heavily armed to meet its challenge.

CAN GAS ASSOCIATION



Time out for lunch. Then back to the board room to plan and budget a two-year industrywide program so that incoming committees will have a good head start and be able to continue "where we left off."

Workshop shows new roles of home service

An outstanding training and refresher course which vividly illustrated the wide variety of home service operation, headed the American Gas Association Home Service Workshop held at the Hotel Statler in Cleveland, January 24-27. Nearly 200 home service representatives from 31 states attended the four-day session and of these approximately three quarters were newcomers to the workshop.

A broad range of subjects were included on the program which was arranged by the American Gas Association Home Service Committee under the direction of its chairman, Eleanor M. Morrison, home service director, Michigan Consolidated Gas Company.

Featured topics included food and equipment demonstrations; research, servicing and installation of gas equipment. A refresher course was given in home service organization, along with

comments by speakers from outside the gas industry on techniques and news concerning the development of new products.

Opening talk on sales and promotion was given by R. J. Vandagriff, general sales manager, The Laclede Gas Light Co., St. Louis, Mo., on "It's Up to You." Setting the theme for the conference, Mr. Vandagriff outlined the major responsibilities of home service departments and stressed the need for their representatives, as the chief customer contact of gas utilities, to understand all the policies and plans of their respective managements.

It is vitally important, he added, that the industry be sold on the importance of home service work.

"... our home service departments and sales departments must work together. Modern engineering science has completed a tiny blue flame and turned it into an indispensable household ser-



Head table at workshop opening luncheon: (left to right) Jessie McQueen, A.G.A.; Karl Emmerling and Jane Schleicher, Cleveland, Ohio; Edward J.

vant, a helper that is clean, dependable and economic. Together our home service department and sales department are seeing to it that that tiny blue flame is burning in more and more homes.

As guest speaker at the luncheon on Monday, Hugh H. Cuthrell, vice-president, A.G.A. and The Brooklyn Union Gas Co., pointed out the opportunities for home service to fit into company and community relations. Friendly relations with customers, now are more important than ever before, he said, since many lush markets have disappeared and trends of consumers' desires again must be followed. As chairman of the A.G.A. General Promotional Planning Committee, Mr. Cuthrell described the important part home service departments can play in the gas industry's coordi-

Some of the workshop leaders of Wednesday afternoon controlled discussion groups: (Left to right) Evelyn M. Kirkpatrick, Boston, Mass.; Irene L. Muntz, Rochester, N. Y.; Mrs. Helen Reilly Clark, Newark, N. J.; Mrs. Alta B. Weymuller, Omaha, Neb., and Mrs. Mary Belle Burnett, Cincinnati, Ohio



Workshop speakers: (Seated, left to right) Mrs. Mary N. Hall, Elizabeth N. J.; Elizabeth J. Lyman, Chicago, Ill.; Mary Elizabeth Huck, Columbus, Ohio; (standing, reading from left to right) Ruth Sheldon, Washington, D. C.; Mildred R. Clark, Tulsa, Okla., and Shirley Ferguson, Wichita, Kan.





Nelson, Rochester, N. Y.; Elizabeth J. Lynahan, Chicago, Ill.; J French Robinson, Cleveland; Eleanor Morrison, Grand Rapids, Mich.; Hugh H. Cuthrell, Brooklyn, N. Y.; Mildred R. Clark, Tulsa, Okla.; R. J. Vandagriff,

St. Louis, Mo.; Dorothy Jones and W. G. Rogers, Cleveland; Irene L. Muntz, Rochester, N. Y.; Edwin L. Hall, A.G.A. Testing Laboratories; Gladys B. Price, Los Angeles, California. Approximately 200 people attended

nated promotional, advertising and research program.

"I know of no other industry that can offer as much opportunity to those who want to use their creative abilities and imagination. Home service today, as a vital part in the promotional plan of the utility, is facing its greatest challenge. What you make of it is up to you."

J French Robinson, president, The East Ohio Gas Co., and a past president of A. G. A., extended an official welcome to the members, remarking that the workshop conferences are helpful in exchanging information on home service operation and spreading knowledge of gas industry operations.

The purpose of the A. G. A. Testing Laboratories was described briefly by E. L. Hall, director, who then invited

the delegates to view laboratory operations and equipment testing procedures. The majority of the delegates accepted Mr. Hall's invitation and made a first-hand inspection during two afternoons allotted for that purpose.

Techniques—The "home call," as the basic activity of the home service program, was analyzed by Mary Elizabeth Huck, The Ohio Fuel Gas Co., who listed benefits to the customer—to the company—and to the home service worker. She showed that in the study of one typical sales follow-up call, the explanation and discussion totaled 69 benefits to the customer and 48 benefits to the company. Miss Huck summarized benefits which, as a result of good service on equipment, created a friendly relationship between company and customer.

"How to Build a Demonstration" was developed by Gladys Price, Southern California Gas Co., Los Angeles. She declared that a blueprint for demonstrations must be: (1) sales slanted; (2) geared to the type of audience for whom it is to be given, and (3) have all details mastered prior to the demonstration.

There is a definite analogy, she said, between building a house and building a demonstration. Both need blueprints, a builder, imagination, cooperation and considerable investment.

"Regardless of the pattern . . . the sales promotion must be made to fit together so the audience gets a picture of ease, convenience, smoothness and education all at the same time. Your audience should leave your demonstration so subtly sold that you have created the desire to purchase."

A helpful over-all picture of demonstration possibilities can be obtained, Miss Price stated, from the A. G. A. booklet, "Home Service Serves the Community."

The "how" of the demonstration was presented in two parts—a demonstration by Shirley Fegert, The Gas Service Co., Wichita, Kan., in a "Gay Nineties Cook Book Review," and the importance of the food display in a demonstration conclusion by Mary Jean Apt, The Gas Service Co., Mission, Kansas. The dramatic story told as a part of food preparation in modern equipment, and the effectiveness of the final food product as a sales tool, were presented convincingly by these two home service directors.

Two workshop discussions covered the preparation of home service lit-

Symposium speakers: (Seated, left to right) Jane Schroeder, Minneapolis, Minn.; Nell Read, San Antonio, Texas; Claudess Bradley, Pontiac, Mich.; Mrs. Florence Neely, Baltimore, Md.; (standing, left to right) Harriette Lundberg, Muskegon, Mich.; Jeanne Montgomery, Columbus, Ohio; Julia Hunter, Dallas, Texas; Vanna Mershon, Clinton, Okla., and Flora Dowler, Pittsburgh, Pennsylvania





R. J. Vandagriff, St. Louis, Mo., delivering address which set the theme for the conference



Jane Schleicher (left), Cleveland, and Jessie McQueen, A.G.A., were in charge of arrangements



Edward J. Nelson, Rochester, N. Y., who discussed the fundamental importance of the gas burner

erature for use in demonstrations and in home calls, and in general publicity from the department. Mrs. Florence Laganke Harris, home economics editor, *The Cleveland Press*, described the "tricks" of the trade in a paper entitled "The Pen and Pencil Side of Home Service." She supplied pointers on how best to prepare publicity and how to explain equipment in writing.

H. Vinton Potter, A. G. A. coordinator of promotion, in a discussion "Paper and Ink Ideas" gave basic information concerning the selection of paper stock, illustrations and final layout for department literature.

The effectiveness of adequate records and reports—their sales significance, and their value in organization and understanding of home service operation was pointed up by Mildred Clark, Oklahoma Natural Gas Company. She illustrated her talk with examples of records and reports currently employed by a number of companies, and her presentation was given as a progress report on the work of the Home Service Committee this year. The general summary will be available at the end of the Association year.

Presenting gas appliances—"The Use of Gas in its Equipment," a subject developed by E. J. Nelson, laboratory director, Rochester Gas and Electric Corp., pointed up the basic importance in the gas industry of the gas burner. He discussed the atmospheric gas burner as the heart of the gas appliance, describing its construction and its utilization of gas in detail. Mr. Nelson used slides to give the home service audience a thorough understanding of this fundamental feature in the industry.

"The Promotion of the Gas Laundry Dryer" was the subject presented by Betty B. Olson, director of home economics, Hamilton Manufacturing Company. She outlined the part home service can play in a program of consumer education on the use of the laundry dryer, and pointed up the importance of a good home demonstration. Further evidence of the value of home service as a sales tool in promoting the laundry dryer was outlined by Mrs. Mary Hall, Elizabethtown Consolidated Gas Co., Elizabeth, N. J., who reported on a customer reaction survey of 270 gas clothes dryers in the area served by her company. Mrs. Hall's talk is reprinted in this issue of the *MONTHLY*.

"The Use of the Gas Refrigerator" was presented in skit form by Servel,

Inc. with the parts played by Martha Carnes, director of the homemaker's institute, assisted by LaVerne Heady and Janet Nauman. A lucid explanation of the home call was the core of this presentation.

"What's Cooking in Commercial Equipment" was the subject developed by John J. Bourke, director of A. G. A. Commercial Gas Cooking Promotion. Slides were used to explain the features of heavy-duty equipment which could serve as background information for home service contacts with community dietitians and school lunchroom managers.

Techniques of gas promotion were illustrated further by the showing of two films—"The Secret of Hot Water Magic," a slide-film in color produced by the Pacific Coast Gas Association, and the colored film "The Wayward BTU," produced by Owens-Corning Fiberglas Corporation. This latter film was presented by W. Whitney Koenn, manager of appliance sales.

Home service underway

Accounts of activities from nine utility companies centered in a symposium of short reports for the benefits of the many home service women who had come to the workshop for "new ideas." The subjects discussed were: "Teen-Age Exhibit," "Home Service Community-Wise," "Neighborhood Cooking Schools," "A Foods Demonstration—Circus Style," "Platter Patterns," "Pink Teas for Teachers," "Drawing a Plan," "A Home Service Scholarship," "P.T.A. Programs."

Participating were: Flora Dowler, The Manufacturers Light & Heat Co., Pittsburgh, Pa.; Jeanne Montgomery, The Ohio Fuel Gas Co., Columbus, Ohio; Mrs. Florence Neely, Consolidated Gas, Electric Light & Power Co., Baltimore, Md.; Nell Read, City Public Service Board, San Antonio, Texas; Harriette Lundberg, Michigan Consolidated Gas Co., Muskegon, Mich.; Vanna Mershon, Oklahoma Natural Gas Co., Clinton, Okla.; Claudess Bradley, Consumers Power Co., Pontiac, Mich.; Jane Schroeder, Minneapolis Gas Co., Minneapolis, Minn.; Julia Hunter, Lone Star Gas Co., Dallas, Texas.

"How to Answer Large Quantity Requests" was the subject given to Ruth Sheldon, Washington Gas Light Co., who gave the answers on this frequently requested information. Her paper included a bibliography of source material

for use in this service to representatives of women's clubs, church and P.T.A. groups which need quantity information for club meetings.

An important part of the program was the opportunity to participate in a Wednesday afternoon session of controlled discussion groups. Leaders in the eight groups were: Mrs. Helen R. Clark, Public Service Electric & Gas Co., Newark, N. J.; Ruth Severson, The Peoples Natural Gas Co., Pittsburgh, Pa.; Mrs. Mary Belle Burnett, The Cincinnati Gas & Electric Co., Cincinnati, Ohio; Vivian Marshall, New Orleans Public Service Inc., New Orleans, La.; Mrs. Loretta Johnson, Tide Water Power Co., Wilmington, N. C.; Mrs. Kathryn Johnson, Rockland Gas Co., Inc., Spring Valley, N. Y.; Mrs. Alta B. Weymuller, Metropolitan Utilities District, Omaha, Nebraska; Irene Muntz, Rochester Gas & Electric Corp.; Evelyn Kirkpatrick, Boston Consolidated Gas Company, Boston, Massachusetts.

Extra dividends

Elizabeth J. Lynahan, The Peoples Gas Light & Coke Co., luncheon speaker on Tuesday, gave an interesting review of progress of the A. G. A. Career Records "Home Economics for Me," which are doing an effective job as the industry's contribution to the recruitment program for home economists. More than 75 sets of records have been purchased by gas companies. Educators have accepted the records as a teaching tool, and they have met with the approval of professional associations such as the American Home Economics Association and the American Dietetics Association.

Members of the workshop were brought up to date on new developments in food products and utensils by representatives of the food industry. "A Baking Pan Survey" was presented by Janette Kelly, General Mills, Inc., Minneapolis, and "Cooking Fats—Their Use in Baking and Frying" by Lydia Cooley, Proctor & Gamble Company in Cincinnati.

"Time and Motion—In the Kitchen" was delivered in an interesting fashion by Ruth Beard, instructor in the equipment department, school of home economics, Ohio State University. Miss Beard illustrated the time-saving feature in selection of kitchen equipment and utensils, and in a series of charts showed ten principles of time-and-motion saving. Three of these were: (1) Make one

task out of two or more; (2) Use the best tool; (3) Make both hands work.

Members of the Program Committee who presided at the various sessions of the workshop were as follows: Jane Schleicher, The East Ohio Gas Co.; Irene Muntz, Rochester Gas & Electric Co.; Mildred Clark, Oklahoma Natural Gas Co.; Elizabeth Lynahan, The Peoples Gas Light & Coke Co.; Eleanor Morrison, Michigan Consolidated Gas Co., and Jessie McQueen, American Gas Association.

Social hours following each day's activities were sponsored by the equipment divisions of the Gas Appliance Manufacturers Association, and planned by James I. Gorton, director of "CP" promotion. The first day's social was sponsored by the gas laundry dryer division through Bendix Home Appliance Company and Hamilton Manufacturing Company. The second was sponsored by manufacturers of automatic gas ranges built to "CP" standards, the third by the refrigerator division through Servel, Inc.



"Gay Nineties Cook Book Review" by Shirley Fegert, Wichita, Kan., showed how to give demonstrations



Delegates from New England: (Left to right) Paula Zambarano, Providence, R. I.; Geraldine A. Foley, Pawtucket, R. I.; Marjorie P. Wheeler, Woonsocket, R. I., and Evelyn M. Kirkpatrick, Boston



Representatives from the South who attended the workshop: (Seated, left to right) Sue Herndon, Little Rock, Ark.; Nell Read, San Antonio, Texas; Thelma Holmes, Montgomery, Ala.; Mildred R. Clark and Mary K. Farnen, Tulsa, Okla.; (standing, left to right) Mrs. Clara L. Irby and Frances E. Griffith, Houston, Texas; Vanna Mershon, Clinton, Okla., and Ann Mahoney, Tulsa, Oklahoma

Production, transmission, distribution, and particularly rate men will benefit from a more accurate knowledge of the amount and the time that customers use gas. In fact, managerial decisions under present day conditions require correct information on the present and potential make-up of our gas load. In 1947, the Special Committee on Economic and Market Research Needs of the Gas Industry reported to the Executive Board of the American Gas Association its conclusion that "it would be impractical to conduct sound economic surveys of the cost of serving present and future house heating loads because of the absence of demand, load factor and consumption data of various domestic gas appliances . . ." In 1948, the Rate Committee issued its "Report on Customer Load Characteristic Study" which describes methods of conducting load tests. The A. G. A. Rate Committee endorses and recommends to the industry Mr. Bary's article as the most complete presentation to date of the load characteristics of gas house heating. This paper was presented February 16, 1949 at a meeting of The Metropolitan Gas Heating and Air Conditioning Council in New York and before that at the 1948 annual meeting of The Pennsylvania Gas Association. It is hoped that this article will stimulate more companies to collect load research data which is of such vital importance today.

—Robb Quinby, Chairman, A. G. A. Rate Committee

Since the end of World War II, the use of gas for house heating in territories served by manufactured gas utilities has emerged from the pre-war status of a service which could be afforded by a relatively few people, gen-

erally the well-to-do, to one which is being sought and demanded by many people in all walks of life.

This metamorphosis has been due in part to the rapid increase in prices of other fuels, especially since the war,

Characteristics

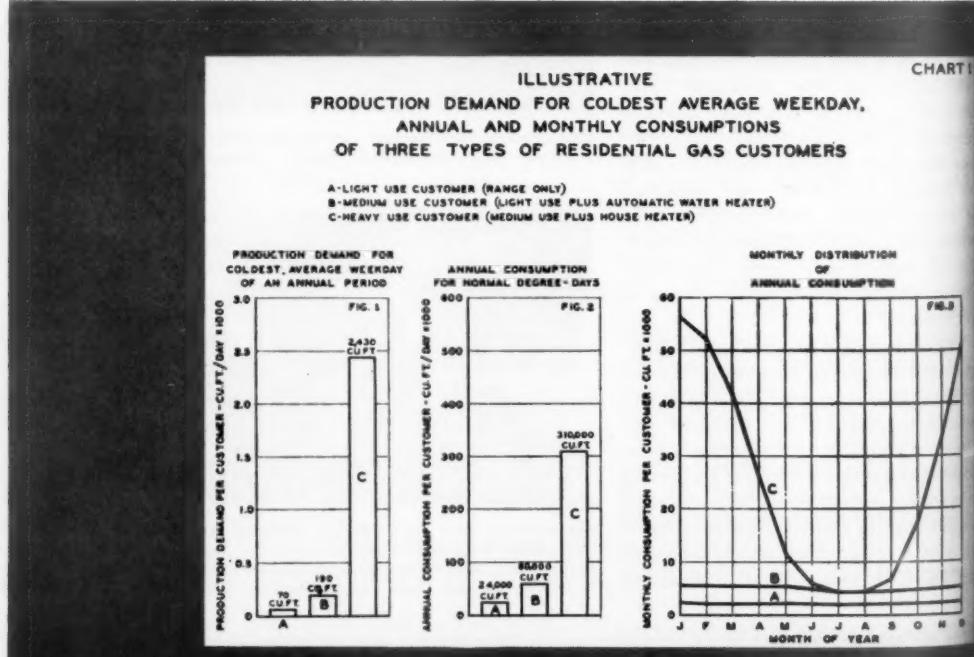
By CONSTANTINE BARY

Rate Research Engineer*
Philadelphia Electric Co.
Philadelphia, Pa.

with the accompanying dislocation of the competitive relationships in the price structure between them. It has been due in part to changed relationships in the "first cost" of different fuel-burning installations; in part to the scarcity and deterioration in quality of solid and liquid fuels, and in part to increasing public consciousness of the advantages of gas house heating.

Rapidly increasing demand for this service since the pre-war period has had a profound effect upon the requirements of gas production and delivery facilities, operation and economics of service supply throughout the gas industry, which in turn has been accompanied by a change in attitude and thinking of engineers, operators and managers of gas utility systems.

The economic significance of load factors and coincidence factors has



Gas house heating load



Constantine Bary

quired added importance in the supply of gas service, to an extent which in the past has not been demanded by the service heretofore rendered. Why? Because of the relative size of the house heating load and because of its vastly different load characteristics from those experienced in the past by the residential class of service for the operation of ranges, water heaters, and a relatively small number of refrigerators and other miscellaneous appliances.

Chart 1 illustrates a comparison of gas requirements for the average residential customer for each of three types. Designation A applies to a present-day light-use customer having a range; designation B applies to a present-day medium-use customer having a range and an automatic storage type water heater, and designation C applies to a heavy-use customer which is as-

sumed to be a medium-use customer with the addition of a gas house heater. The amount of gas required for house heating by such a customer reflects the existing trend toward lower average use as the number of customers increases.

It will be noted from Figure 1 that on an average weekday during the coldest week of the winter period, the production demand requirements of such a heavy-use customer are about 35 times those of a light-use customer and about 13 times those of a medium-use type.

From Figure 2, the annual gas requirements of the heavy-use customer, however, are about 13 times those of the light-use customer and about five times those of the medium-use type. Thus the annual production demand load factor of the heavy-use customer is about three-eighths that of either the light-use or the medium-use type.

Figure 3 illustrates the monthly dis-

tribution of the gas requirement through the year, bringing out the very important fact that, while the requirements of the light-use and medium-use customers are fairly uniform throughout the entire year, those of the heavy-use type are concentrated in the winter months—requirements in December, January and February are from eight to ten times the requirements during the summer months.

The magnitude of this load may be even better appreciated from the fact that a 20 percent saturation in gas house heating installations in the area of the system referred to would produce a production demand (on an average weekday of the coldest week of the winter period for this load) of more than five times the amount produced by the entire requirements on such a day of the residential class composed of the present-day saturation of gas ranges, water heaters and other appliances.

What is of even greater importance, the annual production demand load factor of this volume of house heating load will be one-third that of such a

* Author acknowledges the valuable suggestions received from I. L. Craig and W. W. Gilmore, Philadelphia Electric Co., on the original manuscript of this paper, and the valuable assistance and suggestions of A. Abramovitz of that company in preparing the material.

DEMONSTRATION OF STATISTICAL STABILITY IN DERIVED FACTORS FOR THE AVERAGE CUSTOMER OF A TEST GROUP OF 80 GAS HOUSE HEATERS (BASED ON RANDOM CHOICE SELECTION)

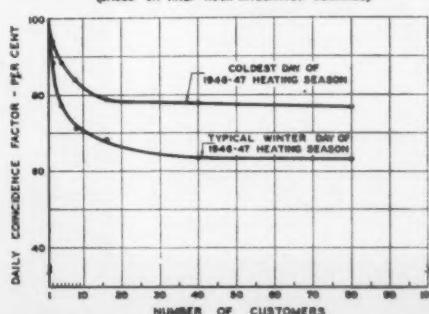
FIG. 1
ILLUSTRATION OF
UNIFORMITY IN ANNUAL LOAD FACTORS
WITH SUBSTANTIAL VARIATION IN
CUSTOMER'S ANNUAL GAS REQUIREMENTS
FOR HOUSE HEATING

MCF	ANNUAL GROUP LOAD FACTORS - PER CENT (BASED ON DEMAND FOR COLDEST DAY OF THE 1946-47 HEATING SEASON)	
	PRODUCTION DEMAND	DISTRIBUTION DEMAND
1.64	25.0	17.3
2.18	25.5	17.3
2.48	26.4	18.7
2.88	25.8	18.1
3.47	25.8	15.7
5.08	26.6	17.8

NOTE - THE 80 TEST CUSTOMERS WERE ARRANGED IN THE ORDER OF INCREASING ANNUAL GAS CONSUMPTION AND DIVIDED INTO EIGHT GROUPS OF TEN. THREE CONSECUTIVE GROUPS OF TEN WERE THEN PROGRESSIVELY ADDED TO FORM SIX GROUPS OF THIRTY BY ADVANCING TEN CUSTOMERS EACH TIME ADDITIONS WERE MADE.

CHART 2

ILLUSTRATION OF
ASYMPTOTIC TREND IN RELATION BETWEEN
GROUP DISTRIBUTION DEMAND COINCIDENCE FACTOR
AND NUMBER OF CUSTOMERS IN GROUP
(BASED ON HALF-HOUR INTEGRATED DEMANDS)



GAS HOUSE HEATING LOAD

CENTRAL FURNACE SYSTEMS

TEST RESULTS FOR A GROUP OF 80 CUSTOMERS DURING THE 1946-47 HEATING SEASON

SEASONAL VARIATION OF MAXIMUM DEMANDS CONSUMPTION AND RELATED FACTORS FOR THE AVERAGE CUSTOMER

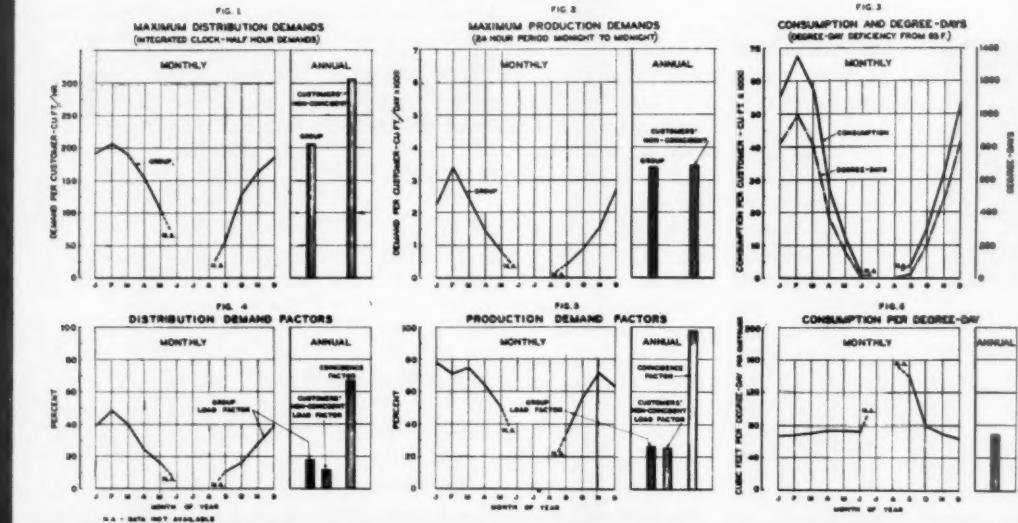


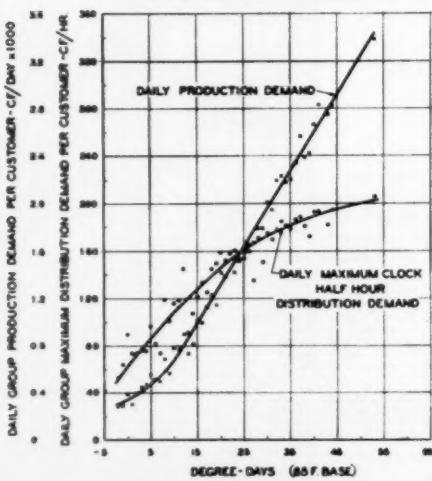
CHART 4

GAS HOUSE HEATING LOAD

CENTRAL FURNACE SYSTEMS

TEST RESULTS FOR A GROUP OF 80 CUSTOMERS DURING THE 1946-47 HEATING SEASON

PROBABLE RELATIONSHIP BETWEEN DAILY DEGREE-DAYS AND DAILY GROUP MAXIMUM DISTRIBUTION DEMANDS AND DAILY PRODUCTION DEMANDS FOR THE AVERAGE CUSTOMER



residential class load. Obviously, a load of this magnitude, with such a different load factor from that experienced by the residential class in the past, deserves careful study as to its economic implications. It will take the resourcefulness and ingenuity of all departments of the gas industry to meet the economic challenge if this load is to be acquired and served without restrictions and if the industry is to make an adequate return from it.

The facts depicted in the foregoing introduction lead to the conclusion that an authentic knowledge of the characteristics of the house heating load and their behavior under varying climatic conditions is essential to a proper exercise of engineering, operating, pricing and general managerial policies in connection with an adequate and economic supply of service to this class of gas use.

Size of this load is so great, its characteristics so different from the ordinary types of gas load heretofore carried by the gas industry, and the profit margin under which it is ordinarily served, so slim that old "rule-of-thumb" guides are no longer depend-

able to give a high degree of accuracy or to provide confidence in the validity of predictions required for establishing the physical and economic features of its service supply.

Thus research must be undertaken to obtain knowledge of the various phases of gas house heating load characteristics by inaugurating comprehensive tests of carefully selected samples over the desired range of gas house heating use.

The object of this paper is to describe and interpret the results of load research conducted by the Philadelphia Electric Company on its house heating class of gas use.

This paper will describe the method followed in selecting the test sample; it will present the results of information secured from the tests, and will demonstrate the existence of probable average relationships between the more important characteristics of the house heating load and the outdoor temperature, the most important single factor affecting these characteristics.

These analytical and empirical relationships for the average of customers tested permit an interpolation and extrapolation of data for gas heating requirements for temperature conditions other than those which were actually experienced during the test period, and indicate important trends in the house heating load with a change in outdoor temperature.

Sampling method

Gas for house heating was supplied to approximately 8,000 customers in the company's gas service territory at the time tests were inaugurated in the fall of 1946 to cover the 1946-1947 heating season. These tests were conducted during that period to obtain data on the demand and gas consumption characteristics of this load and on other related factors.

For the purpose of this study, 80 customers were selected for test by the "mass sampling" method, which in fact attempts to reduce the "universe" of the mass to a sample, the average of which should represent in all aspects the characteristics of the average of the "universe."

This method of sampling was adopted in the study from consideration of the quantity of meters which could be made available for the test,

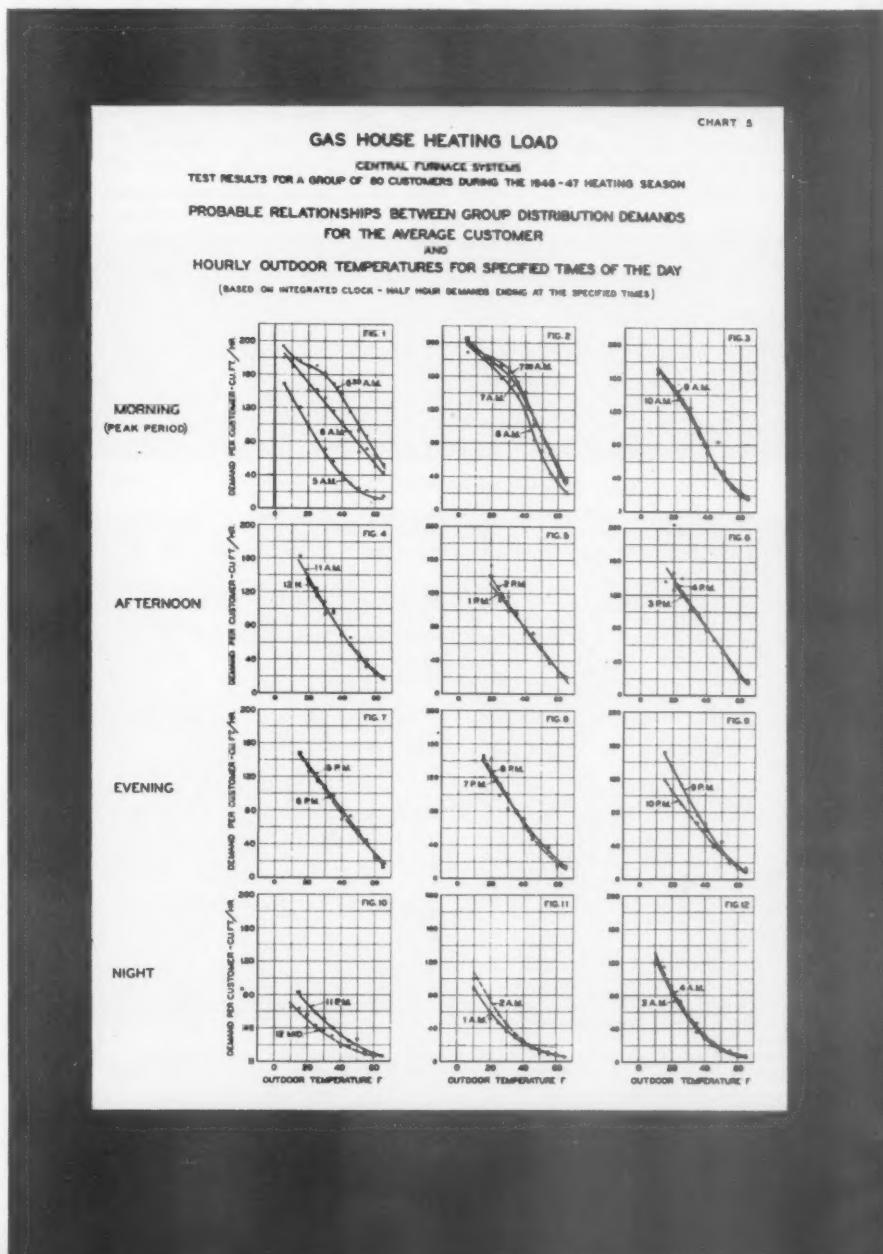
the desire to use as large a number of test customers for arriving at the characteristics of the average customer as the number of available meters would permit. The method was adopted also from the general belief, later borne out by the results of tests, that the important factors of load characteristics of an appliance such as a house heater, performing a homogeneous function whether in a large or a small house, should be reasonably uniform and consistent over the entire range in the size of house heating requirements.

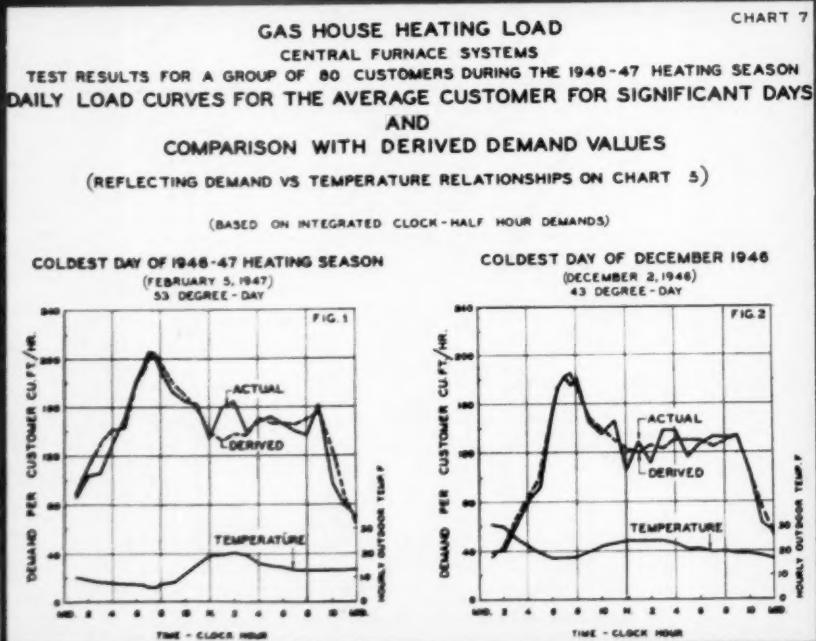
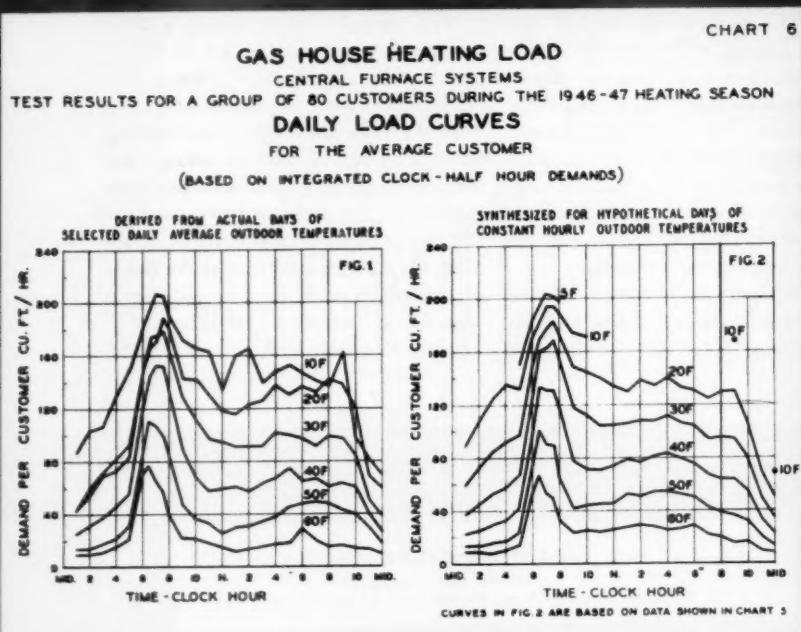
A preliminary mass sample of 500 customers was picked from the file card record of the 8,000 customers by

selecting every sixteenth card in continuous order. From this sample, a final selection of 80 test customers was made by random choice.

This sample, when tested against company records, was found to have a geographic distribution among the various operating divisions, similar to that of all the company's house heating customers, and to have an average annual total gas usage per customer comparable to that of this entire class.

Data in Figure 1 of Chart 2 illustrate that, for such an appliance as the house heater which performs a homogeneous function of heating a space, the annual load factors based on production de-





mands and on distribution demands, substantially of the same magnitude, for groups of customers varying widely in amount of annual gas requirement for house heating.

Figure 2 of that chart illustrates that in a given territory, statistical stability in the load characteristics of the average customer of a mass sample, selected by random, may be expected for as few as 80 customers in the sample, and results of sufficient engineering stability can be obtained even from sample composed of 30-50 customers.

A special gas test meter designed to record electrically the integrated clock half-hour demands was installed on each of the test customer's premises to measure the gas use of the house heating equipment only. The test was conducted for the 12-month period ending August 31, 1947.

Continuous records of demands were obtained for the entire period of the normal heating season in this area, September 1, 1946, to May 31, 1947, and hourly measurements of outdoor temperature were obtained for that period from instruments located at one of the company's gas production plants situated centrally within the territory served.

Test results

All data on demands and gas usage contained in this paper are expressed on an average-customer basis of the sample tested. The test results reflect the actual climatic conditions experienced in the territory during the period of the test, and these results together with the derived analytical relationships also reflect the physical characteristics of the houses and of the heating installations actually encountered among the sample customers. Care should be exercised in making use of this information for other climatic conditions and for other physical characteristics of house heating customers.

The accompanying table contains a numerical statement of physical characteristics of the average customer tested. Attention is directed to two significant numbers: the radiation loss of the average customer tested as calculated by the standard ASHVE† heating formula for a 70° F differential of 90,273 B.t.u. per hour, and the actually measured input (Continued on page 42)

† Stands for American Society of Heating and Ventilating Engineers.

Gas clothes dryers pose a challenge

By MARY N. HALL

Home Service Director
Elizabethtown Consolidated Gas Co.
Elizabeth, N. J.

Gas clothes dryers constitute a challenge, not only to home service, but to the gas industry as well.

A new gas appliance is now available which means an absolutely new load on gas mains. Seventy percent of this new load is in the upper brackets of the rate structure and therefore is a profitable one. We must remember, too, that if and when single-point ignition comes into general use, the load derived from pilots will be cut down. The gas clothes dryer is one way of making up that loss.

Another strong point in favor of dryers is that women love them once they use them. We loved the automatic gas clothes dryers ourselves when first we saw and used them. We realized their possibilities both so far as the user was concerned and also so far as the merchandizer was concerned. When it was possible to stock an adequate supply of dryers, we tried to sell them but met with stubborn resistance. Women liked the idea. They thought a clothes dryer would be wonderful to have, but they had always hung their clothes on a line to dry and they would continue to do so.

In the meantime, the home service department's enthusiasm for the dryer was growing. We felt that while the automatic water heater, washer and ironer had done much to eliminate the drudgery of washday, still one of the worst jobs remained—hanging up clothes outside in all kinds of weather or strewing them all over the house to dry.

The automatic gas clothes dryer had at last done something about the weather, not to mention the steps saved and the hazards involved in lugging

heavy baskets of wet clothes. We were convinced that if a woman once used a dryer, she would like it. Therefore we approached a selected list of our customers, located strategically throughout our whole territory, and asked them if they would cooperate in trying out this new gas appliance which we thought so desirable. We explained that actual use in the home was the real test of any appliance and that their cooperation would be of great value to us, to the manufacturer, and to women in general.

There was no cost involved to the customer, but a time limit of 30 days was put upon the test. At the end of the 30 days, in return for her kindness in making the test and if she were satisfied with the dryer, we offered to rent it to the customer at a small monthly fee. If she were not satisfied, we would remove it at once, without charge.

We had no trouble in placing 50 dryers under these conditions and as we had surmised, once a woman used the

dryer, she would not part with it.

We placed these first dryers during the period from June 3 to July 15. From July 16 to August 15, 229 additional dryers were installed on a similar basis but at a slightly increased rental. We knew then that the dryer was not another gadget but an appliance which women like and which finishes the job of taking the hard work out of home laundry. August 15, we discontinued the trial offer but continued the rental plan at \$3.00 per month. As of January 14, we have 557 dryers operating in the homes of our customers.

We wanted to know the reaction of these women to the dryers after they had been in use and so we prepared a questionnaire asking direct questions which called for direct answers. The replies amazed us and I think you will find them interesting. The survey covers 270 dryers which have been in operation for thirty days or more.

Of the 270 dryers covered by the survey, two were returned; one because the whole house went electric and the second because of domestic friction between husband and wife. One hundred twenty-three of the 270 women interviewed liked the convenience of the dryer more than any other one feature; 97 liked the finished product; 33 liked everything about it, and the remainder had a variety of likes.

We also asked these women what they did not like about the dryers. Seven definitely disliked the moisture—five the



Rochester Gas & Electric Corporation is one of many utilities enthusiastic about the automatic gas clothes dryer. Robert Moore, factory representative (above), demonstrates a new dryer to Home Service Representatives Helen Kramer and Cynthia Heister in company's Merry Monday center



Cartoon courtesy Nation's Business

lint, and 19 had various dislikes which in most cases could be traced to improper use of the appliance. The remaining 240 women expressed no definite dislikes.

Under "Improvement Suggestions," 14 wanted bigger and better lint traps, nine a flue for moisture, and 19 wanted various miscellaneous improvements, leaving 235 with no suggestions to offer.

Forty-one of the families used the dryer everyday of the week—including Sunday. Seventeen used it in bad

weather only, and the remainder used it for times varying from one hour to 24 hours a week.

We also discovered that of the 270 dryer users, 151 used an automatic washer, 84 the conventional washer, 31 a spin dryer, and four used miscellaneous equipment.

One hundred thirty-one women had a gas automatic water heater, 31 a manual gas heater, 89 used oil for water heating, 13 a pot stove, and one an electric water heater.

All 270 of the dryer users would recommend the dryer to their friends and in many cases have done just that.

We believe that much of this satisfaction derives from the fact that we got our customers off on the right foot in using the dryer. As soon as a dryer was installed, a home service girl called at the home on definite appointment, and helped the customer use the dryer for the first time. Actual family wash was done and dried.

This gave the home service girl an opportunity to check the washing technique all along the line—hot water supply, soap, water softener, starching, use of the automatic washer in particular (so many women do not use them correctly) tension of wringers, kinds of load, ironing methods, etc. It also gave her an opportunity to check the actual time in the dryer and to show how clothes can be removed ready to be ironed or to be folded and put away.

The most important point covered in this call, however, was the moisture and lint. We found that if the moisture and lint were explained as they occurred, the customer accepted the fact that they are inevitable in the drying of clothes. We

think this is the one reason why moisture and lint have not constituted a major problem, even though there are more objections on that score than any other.

We have done no advertising whatsoever in putting across these dryers. The promotion has been accomplished mainly by the recommendations of satisfied users who are only too happy to spread the news. We believe this is due to the careful instruction customers receive on the operation of the dryer before any bad usage habits are developed.

This is where the challenge to home service comes in. The best sales promotion in the world will fall far short of success if the dryer does not come up to the customer's expectations. It is up to home service to see that the automatic clothes dryer does meet expectations. In order to do this, each home service girl, in addition to knowing mechanical operation of the dryer, must

(1) Be thoroughly sold herself before any attempt is made to demonstrate the dryer to a potential customer or user.

(2) Have an opportunity to use the dryer under actual home conditions.

(3) Know good laundry techniques.

(4) Be familiar with standard washing machines.

(5) Know whether or not the automatic washer or wringer type washer is doing a satisfactory job of water extraction.

(6) Know the problems involved in starching clothes ready for the dryer.

(7) Know detergents and water softeners.

(8) Know the "feel" of the clothes as they come from the dryer; whether ready for ironing or for folding to put away.

(9) Know approximate times for drying various materials.

(10) Know how to present the moisture and lint condition in such a way that it will be minimized in the customer's mind.

(11) Know how to outweigh any "disadvantages" with the many advantages the dryer possesses.

(12) Know how to help the housewife plan her work and time to receive the greatest benefit from the dryer.

Each and every one of these points enters into the customer's acceptance of the dryer. If you will follow these points, I am sure that you, too, will find that women don't just *like* dryers, they *love* them.

Public relations

• A more complete definition of public relations will appear in the new edition of the G. & C. Merriam Webster's International Dictionary. Quoted in advance at the Inland Daily Press Association meeting in Chicago, the new Webster will define public relations as: (1) The activities of an industry, union, corporation, profession, government, other organizations or the like in building and maintaining sound and productive relations with special publics, such as customers, employees or stockholders, and with the public at large, so as to adapt itself to the environment and interpret itself to society. (2) The state of such activities, or the degree of their success, in furthering public understanding of an organization's economic and social adjustment; as, good or bad public relations. (3) The art or profession of organizing and developing these activities; as, university courses in public relations; public relations requires technical skill in various techniques. Hence, public relations officer, director, counsel or consultant.—*Printers' Ink*.

Gas production research study to aid purchase of most economical raw materials

Evaluation of gas-oil simplified

A PAR activity

Simplified methods of evaluating oils used for carburetting purposes, an achievement of major interest to large sections of the gas industry, are forecast as the result of current work on Gas Production Research Committee project CPR-23, "The Enriching Value of Oils." Work was initiated and is continuing at the Institute of Gas Technology in Chicago.

The new methods for evaluation of carburetting oils will enable gas producers to (1) make more effective use of available oils, (2) purchase the most economical oil, and (3) cut to a minimum the time needed to evaluate the cost and usefulness of carburetting oils. As a result of the present study, the time needed to determine the enriching value of gas oils is reduced to several hours or about ten percent of the time previously required. The new methods should be of benefit to all companies large or small which use carburetting oils. In addition, small plant operators for whom the standard Dick test is not practicable will benefit from the current A. G. A. project as it will enable them to evaluate gas-making oils by simple bench tests.

A complete report on the oil evaluation study will be published later this spring, presenting in detail the theoretical considerations, laboratory techniques and graphs for estimating the carbon-hydrogen ratios and gas enriching values of the oils studied.

Work on this project at I. G. T. is an integral part of a comprehensive attack upon bottlenecks in the efficient selection of gas-making oils and is the third of three projects on that subject. Earlier studies concentrated on the planning and construction of a modern oil testing laboratory under the guidance of experts, and on the acquisition, installation and testing of equipment selected in the planning phase.

Accordingly, the laboratory used in the project has as its basic equipment an oil cracking furnace with all the necessary apparatus, including automatic temperature controls. Auxiliary equipment consists of a remarkably

complete assembly of standard apparatus for determining physical and chemical properties of oils, such as gravity, Conradson carbon, aniline point, distillation, and others.

A steel helices-packed column equiv-



Working on distillation columns in oil evaluation laboratory at Institute of Gas Technology

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Supervising committee studying latest progress reports for project on enriching value of oils: Louis Shnidman (left), chairman; H. R. Linden, H. E. Ferguson, E. M. Bliss and E. J. Murphy

alent to 70 theoretical plates was added recently to complete the fractionation equipment. Both a dehydrator flash still and an apparatus for extraction with propane, butane and higher hydrocarbons are available for the purification and study of the resultant tars.

During and after the shake-down tests, a survey of existing literature on methods for correlating physical and chemical properties of oil with enriching value, was conducted as the initial attack on the problem. It soon became apparent that the most promising approach toward determining the enriching value would be to use the actual carbon-hydrogen weight ratio as a basis for the correlation of cracking tests and physical and chemical data with enriching value determined by the cracking furnace.

Laboratory experimental study then was initiated with exploratory work using three typical oils. These first tests were designed to train personnel

and establish the performance of the cracking furnace. This work was followed by further studies and tests of a heavy catalytically cracked oil gas. The effect of cracking atmospheres of hydrogen, carbon monoxide and combinations of these two gases on enriching value was studied in conjunction with the over-all aim of correlation. Thus it was learned that oil-gas yield and enriching value increases the hydrogen content of the atmosphere. Acceptable correlations were observed between the carbon-hydrogen ratio of the feed oil and the enriching value of the gas and tar yields in some 27 tests.

Having established the usefulness of the carbon-hydrogen ratio, every effort was directed toward finding some simple way of determining this ratio. It was demonstrated that the carbon-hydrogen ratio can be predicted satisfactorily and without difficulty from formulae involving proper combinations of three of the following characteris-

tics: density, mean boiling point, distillation, mean dispersion and aniline point. In short, the carbon-hydrogen ratio can be estimated in this manner and the enriching value in turn can be estimated from the carbon-hydrogen ratio. Using these methods in the laboratory, enriching values have been estimated within an accuracy of approximately three percent of that obtained by actual cracking in the furnace.

The successful laboratory techniques developed under this project have been assembled and described in a manual entitled "Tentative Methods for Estimating the Enriching Value of Oils for Gas Plants" which is being distributed to some 20 cooperating gas companies that have been asked to test in actual plant operation this winter the oil evaluation techniques developed under this project. Data resulting from field trials will be weighed and incorporated in the final report on simplified techniques for oil evaluation.

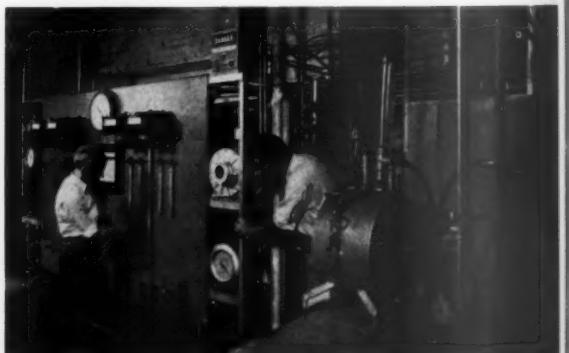
Further experimental work will study methods to improve oil utilization by employing oil preheating, pressure carburetion, and special operating procedures for high-carbon-residue and catalytically cracked oils in an effort to provide data directly applicable to the use of heavy residuums.

The laboratory staff will also investigate the effects of cracking temperature contact time and partial pressure of hydrogen in cracking atmospheres for a wide range of oils.

Louis Shnidman, Rochester Gas & Electric Corp., chairman of the project supervising committee, describes the current work as already having produced results of great significance to manufacturers of water gas.



Staff researchers measuring the kinematic viscosity of an oil as a part of A.G.A. Project CPR-23 on the evaluation of oils for carburetion



Oil evaluation tests made in the cracking tube at the far right are controlled from two panel boards, one of which is shown above at left center

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New drive to push range sales

A PAR activity

A hard-hitting spring campaign geared to recent changes in the national marketing picture is being readied to further the promotion of domestic gas ranges throughout the country. The new drive will be sponsored by the Domestic Gas Range Committee of the Association's Residential Gas Section, Carl H. Horne, Alabama Gas Co., chairman, and is designed for use in April, May and June. It will tie in closely with A. G. A. national advertising scheduled for those months.

Modelled along the lines of the successful fall campaign on domestic ranges which gained the support of more than 175 utilities last year, the spring effort will take full cognizance of the sudden end of the sellers' market in major appliances.

Principal item in the campaign is a 16-page portfolio prepared by the A. G. A. Promotion Bureau which will arm gas range dealers with ideas and materials to aggressively go after sales in the new buyers' market. The slogan "Smart Cooks Know—Gas Has Got It!" will be featured.

Sales approaches

Included in the portfolio are the following items:

A picture of the replacement market showing that three out of four gas ranges in use are more than five years old, one out of every two is more than ten years old, and one out of four is



Cover of brochure for spring domestic range campaign which will tie in with the buyers' market

more than 15 years old, and a picture of the new building market which shows that for every 40 occupied dwelling units now in existence, a new unit will be constructed in 1949.

Also included are an outline of two approaches to making sales in today's market; a display of current national advertising with a breakdown showing the number of impressions registered in each state and in Canada; a display of current dealers' newspaper advertisements to show what dealers across the country are doing; an exposition of the sales features of gas cooking; promotion ideas for cold canvassing, for floor and window displays and for building prospect lists, and an outline of the assistance gas range manufacturers are prepared to offer appliance dealers.

The portfolio particularly urges dealers to have salesmen canvass their territories thoroughly. In order to assist these

salesmen in obtaining an audience with the housewife, three "door-opener" items are offered: the highly successful full-color cook book, "Food Is Fun," potholders which were first offered last fall, and a new premium, an eight-inch plastic bowl cover. Both the potholders and the bowl cover carry the slogan for the spring domestic range drive, "Smart Cooks Know—Gas Has Got It." These items are offered at ten cents apiece.

Helpful ideas

Accompanying the dealer portfolio when it is mailed to gas utilities after March 15 will be a kit of other helpful ideas in advertising, display and promotion, together with suggestions for obtaining greater cooperation from gas range dealers in the effort to make every homemaker in the country aware of the superiority of gas fuel and gas ranges.

Research at work

Laboratories push utilization work

A PAR activity

Gas utilization research projects conducted by the American Gas Association at the Cleveland Testing Laboratories embrace several specialized fields important to the advancement of the gas industry. These projects are concerned with technical studies basic to the improvement, refinement, installation and performance of modern gas appliances, and consist of fundamental research helpful to the design of domestic, industrial and commercial types of gas equipment.

Members of the A. G. A. Laboratories staff engaged in conducting utilization research projects are shown in the accompanying photograph. Direct supervision of domestic projects is handled by Walter B. Kirk. Industrial and commercial projects are the responsibility of Frank E. Hodgdon.

Both Mr. Kirk and Mr. Hodgdon have had wide experience in technical and other phases of gas utilization.

They have headed their respective departments since they returned from service overseas in 1945 and 1946.

Mr. Kirk is a chemical engineer, a graduate of Case Institute of Technology. He joined the Laboratories staff in 1937 and in addition to being familiar with utilization research, testing procedures, and requirements investigations, engaged in early mixed gas research studies.

Mr. Hodgdon, a graduate mechanical engineer of Georgia School of Technology, joined the staff in 1939. He directs industrial and commercial utilization research and also is in charge of requirements investigations.

Three other staff members first became associated with the Laboratories at about the same time as Mr. Kirk and Mr. Hodgdon. Earl J. Weber and Donald F. Leverett joined the staff in 1937 and Milton Zare joined it in 1936.

Mr. Weber is a graduate chemical engineer of Case Institute of Technology and obtained his master's degree from University of Michigan. He is the Laboratories' expert on combustion and burner design and a consulting member of the American Society for Testing Materials Subcommittee on The Collection of Gaseous Samples.

Mr. Leverett, a graduate of University of Michigan, obtained his degree in electrical engineering. He has worked extensively with central heating equipment and has just completed a research bulletin on proper methods of installing such equipment in confined spaces. Mr. Zare was graduated from Ohio State University with a B.A. degree in chemistry and has been associ-

ated with many phases of the industry's research program where his experience is being utilized in an advisory capacity. He also handles technical aspects of publishing research bulletins and reports.

In addition to Mr. Weber, two other staff members hold master's degrees, Richard L. Stone (not in photograph) completed both his undergraduate and graduate work at University of Michigan. Thomas C. Wheat was graduated from University of Oklahoma and obtained his master's degree from University of Cincinnati. Both are chemical engineers.

Mr. Stone is conducting a comprehensive study of the heat transfer phenomena occurring in a combustion chamber surrounding the flame zone, one of the most fundamental and technical projects ever undertaken at the Laboratories. Mr. Wheat currently is engaged in gas water heating research. Likewise engaged in water heating research is Alfred A. Kampman, a graduate chemical engineer of Case Institute of Technology.

Mrs. Winifred C. Anderson, Laboratories staff home economist, is responsible primarily for domestic gas cooking research and particularly for projects requiring the actual preparation and cooking of food. She presently is conducting research on various methods of cooking and is serving the A. G. A. Home Service Committee.

Mrs. Anderson recently completed preparation of a second research bulletin on methods of kitchen ventilation, having conducted comprehensive studies in representative test kitchens. She received her B.S. degree from Ohio University after majoring in foods and nutrition.

Actual cooking operations in the industrial and commercial gas field are being conducted by Roy A. Siskin and Miss Esther J. Secor. Mr. Siskin, who recently completed a study of modulated operation of warm air furnaces, is a chemical engineer and was graduated from Case Institute of Technology. Miss Secor holds a home economics degree in household equipment from Iowa State College.

Four staff members besides Mr. Weber currently are conducting general utilization research on burners, controls and accessories. They are Louis J. Kane, John C. Anthony, Donald A. Biddle (*Continued on page 44*)



A. G. A. Laboratories staff: (Front row, left to right) Winifred C. Anderson, F. E. Hodgdon, Edwin L. Hall, director; K. R. Knapp, assistant director; W. B. Kirk, Esther Secor; (middle row) D. A. Biddle, R. R. Rausch, Milton Zare, A. A. Kampman, Marguerite Heilbronn, K. L. Badger, J. C. Anthony, E. J. Weber; (back row) T. C. Wheat, L. J. Kane, D. F. Leverett, E. A. McGee, R. A. Siskin, L. V. Cachat

Sales meetings that click

With the return of competition, management attention is being turned to merchandising programs. Methods are being reviewed and plans formulated in order to obtain the volume of orders necessary to meet the needs of business. Industry's expanded production capacity constitutes a real threat to our national economy unless it can be profitably exploited. Demand must be stimulated to

By J. WILSON GAW

General Sales Manager

Seattle Gas Co.

Seattle, Wash.

upset. The shortage and non-availability of domestic appliances meant that normal growth in this field was stunted. Replacement of obsolete equipment virtually stopped. Today supply has been brought into close relation with demand in most commodity fields. Gas appliances must again be sold.

The holding of sales meetings before the war was a common practice and many gas companies working crews of appliance salesmen held such meetings at regular intervals. In cases where small crews were retained, meetings of these men were called only when some announcement was to be made or instructions given.

Now that most companies are rebuilding their sales forces regular sales meetings again will be held. With new men entering the field, and old men returning "rusty" from lack of practice, more emphasis will have to be placed on training. I believe it can be assumed safely that whatever formal training program a company adopts it will be supplemented at least with sales meetings.

One thing is certain—if a company is to have successful salesmen, they must be given continuous training. Their suc-

cess will depend to a very large degree on their knowledge, plus the ability to make practical application of it.

With proper planning, the sales meeting can be a most valuable sales management instrument in developing these men.

I believe it is too often overlooked that the knowledge men acquire comes through the use of the five senses instead of just two. In the past, sales managers were prone to use the salesmen's ear to a large extent to put over their messages, with appeal to the eye a poor second. The technique that makes use of taste, smell and feel as well, will make a much longer and more lasting impression. Due to the flexibility of planning possible in a sales meeting program, full advantage may be taken of these five sources of acquiring knowledge.

An important item to remember in planning a program is that a man may be crammed full of facts, figures and theories but if he does not know how to use them he makes few sales. Therefore, he should be told not only what he should know but also *shown how* to use that information.

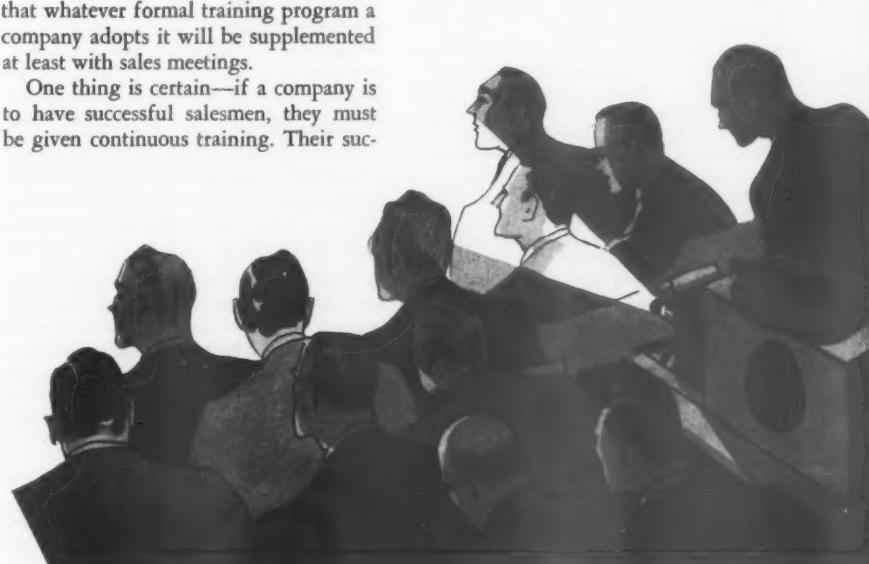
Another point to keep in mind while planning meetings for your men is a

absorb the large additional quantity of merchandise available.

The high standard of living this nation enjoys is due in no small way to the activities of its salesmen. Their work of interpreting to the consumer public the benefits and satisfaction derived from using products produced by industry means that items first looked on as luxuries are soon considered necessities or staples.

The gas industry during the war emergency, in common with all industry, turned its full attention to the winning of that war. From the standpoint of peace-time operation much maladjustment occurred. Basic load factors were

Presented at Pacific Coast Gas Association sales training conference on February 25, 1949.



statement at the bottom of a card put out during the war by the Office of Production Management, "If the Worker Hasn't Learned, the Instructor Hasn't Taught."

Next, do not attempt too much in one meeting. Pick out one or two major points and drive them home. A man's mind can assimilate only so much in any

given period.

The spectacular always gains attention and is not quickly forgotten.

Use all the "props" you can. They add to interest and prevent monotony of presentation. An item worth considering as standard equipment for the salesmen's regular meeting room or office is a full-length mirror. It can carry a real les-

son to the salesmen if properly handled. The secret is to use small signs placed at appropriate heights reading as follows: Top sign saying "Final 30 Second Check Up." Immediately below a sign with "Would You Buy From This Guy." On the sides at correct height, small signs saying, "Suit Pressed? Hair Combed? Smile? Tie Straight? Shoes Shined?" At the bottom, "OK—Now Get the Order."

Periodically, bring in outside "speakers" to tell about their businesses and the methods they use. Factory representatives are always good bets for an interesting meeting. Not to be overlooked in this regard are the chief executives of the company, for salesmen always are interested in the affairs of their own firms. In addition they like to feel that the "boss" thinks they are important enough to take the time and effort to attend their meetings and give them a message.

"Visual aids" are an invaluable source of meeting material. Motion pictures showing all phases of the sales story and its presentation are available. Pictures made by the industry itself are especially valuable in giving the salesman a broader conception of the industry with which he is associated. By viewing the American Gas Association film, "Winning Seals of Approval," the salesman's confidence in the equipment he is selling will be assured. Besides motion pictures there are always good new slide films with recordings.

Salesmen themselves should be used. Not all men enjoy taking part in a program but there are those who do, and it is certain that the others like to watch and hear what they do. Short skits are most effective in bringing points home. This is especially true in pointing up "errors" in technique. The skits are often humorous, a quality which in proper quantities is good for any meeting.

Make direct comparison with competitive equipment. Show the strength and weakness of each. If the competitive equipment is superior on some point state it frankly. The men at least will not be caught unprepared when confronted with that equipment in the field. This is the type of thing that quickly builds or destroys confidence—one of the qualities a salesman needs most in self, product and firm.

There is a wealth of available material that can be adapted for use in sales meetings in the numerous printed sales courses provided by the industry, as well as by manufac- (Continued on page 26).

Industrial relations round-table



Prepared by A. G. A. Personnel Committee

● A bibliography on foreman training has been prepared by the American Management Association. It includes A. M. A. publications as well as other books, pamphlets and services. Copies have been prepared by the Personnel Committee of the American Gas Association and may be obtained on request from Association headquarters.

● The Wisconsin law providing for compulsory arbitration of disputes involving public utilities has been upheld in a recent decision by the Wisconsin Circuit Court, Milwaukee County. This case was one brought by certain unions against the Wisconsin Employment Relations Board, Milwaukee Gas Light Co., and the Milwaukee Electric Railway and Transport Company. The Court held that the Act is a proper exercise of the State's police powers. The Court rejected the plaintiff's contention that the Act violated the Constitution as involving slavery, denial of due process, and an invasion of executive powers. It rejected the argument that the Wisconsin Act was in violation of the Taft-Hartley Act.

● Fringe labor costs for non-productive work were studied by the A. G. A. Personnel Committee in 1948 covering the year 1947. It is planned to conduct the survey to cover 1948. Results of the initial survey exceeded expectations and it is anticipated that an even greater response will be obtained in the second study. Tabulated results are furnished only to those companies which participate in the survey.

● The Bureau of Labor Statistics has recently released preliminary drafts of three new labor contract provision surveys. These are revisions of three chapters of Bulletin 686 ("Union Agreement Provisions") published

in 1942, and cover the subjects of (1) seniority, (2) union rights, activities and responsibilities, (3) management prerogatives.

● Last-offer polls in national emergency cases under the Taft-Hartley law have all ended in rejection. This was reported to Congress by Federal Mediation and Conciliation Service Director Cyrus S. Ching. He is of the opinion that such a technique is unsatisfactory in settling disputes. His other recommendations include keeping F. M. C. S. as an independent agency and clarifying its area of responsibility to avoid conflicts with State mediation groups.

● A union officer is not necessarily disqualified from serving as an election observer, according to a recent N.L.R.B. decision in a United States Gypsum Company case. The company contended that since supervisors were not permitted to act as election observers, union officers should likewise be excluded. The union officer in the case was an eligible voter in the election and, according to N.L.R.B., had engaged in no acts of coercion of employees.

● "Developing an Employee Merit Rating Procedure" is an excellent article appearing in the January 1949 issue of *Personnel*, published by the American Management Association. The author, Reign Bittner, director of personnel research, Owens-Illinois Glass Co., has condensed much practical information and presents some stimulating ideas.

● "Recent Trends in Industrial Pension Plans," a list of selected references, has been published by Industrial Relations Section, Princeton University, Princeton, N. J. Price is ten cents from the publisher.

Advance program for spring meeting shows
an imposing array of industry and guest speakers

Accountants ready for Detroit



C. B. Boulet (left), who will address general session, and L. E. Reynolds, A.G.A. chairman



advisory board, Committee for Economic Development. Professor Slichter, a nationally recognized figure in his field, will discuss present day economics as they affect the public utilities. He is the author of numerous popular and scientific papers and has served on the staff of The Brookings Institution in Washington, D. C., as a member of the Social Science Research Council, the American Economic Association, and other organizations.

The topic "What the Top Utility Executive Expects from the Accounting Officers of His Company" has been selected as a leading attraction on the program and will be presented by D. A. Hulcy, president, Lone Star Gas Co., and second vice-president, A. G. A.

Another headline address will be delivered by C. B. Boulet, Wisconsin Public Service Corp., Milwaukee, Wis., on "It's In the Cards . . . that Labor Will Continue To Press and Increase Its Demands. . . . Facts . . . and What We Should Do About Them."

Mr. Boulet is director of personnel for his company, chairman of the E. E. I. Industrial Relations Committee and an active member of the A. G. A. Personnel Committee. He is also a past-president of the National Association of Personnel Directors and the American Society of Safety Engineers.

In addition to the nationally recognized speakers mentioned, the opening session will include a report of the joint A. G. A.-E. E. I. Accounting Employee Relations Committee on "Office Working Conditions or Practices in Accounting Departments." J. F. Farley, New York State Electric and Gas Corp., Ithaca, N. Y., and A. W. Smith, Worcester County Electric Co., Worcester, Mass., the co-chairmen of this committee, will discuss in detail a recent survey on this subject.

Beginning Tuesday morning, the conference will divide into two parallel

sessions of the General Accounting Activities and Customer Accounting Activities Groups, a practice which became popular at earlier conferences.

The General Accounting Activities Group with A. T. Gardner, Delaware Power & Light Co., Wilmington, Del., and W. H. Zimmer, Cincinnati Gas & Electric Co., Cincinnati, Ohio, presiding, will present an important program for all accountants interested in this field. Financing and investor relations will be discussed, accounting techniques in rate proceedings explained, and functional or responsibility accounting methods described.

A general accounting activities luncheon is scheduled for Tuesday noon with a prominent speaker. The Taxation Accounting Committee under Co-Chairmen B. S. Rodey, Jr., Consolidated Edison Co. of New York, Inc., and J. R. Weger, Consolidated Gas Electric Light and Power Co. of Baltimore, is handling arrangements for the luncheon meeting. Early in February that group met in Atlanta, Georgia to select an outstanding tax authority for the luncheon program and to discuss recent leading tax cases and individual tax problems which the Taxation Committee will consider on Wednesday morning.

More highlights

Another top event will be the Tuesday morning Materials and Supplies Committee meeting followed by the customary luncheon. This group will discuss the use of repeating purchase requisitions during the morning, and will hear a report on delivery of material and supplies to storerooms and jobs during the luncheon meeting. Motion pictures portraying the handling of materials and supplies in storerooms will climax and close this session in the afternoon.

Tuesday afternoon and Wednesday

A well-balanced program for the joint A. G. A.-E. E. I. Spring Accounting Conference in Detroit, April 11-13, was unveiled at a recent dress rehearsal of the accounting committees of the American Gas Association and Edison Electric Institute in Cleveland. The program is being arranged to present an impressive array of stimulating ideas, new accounting applications and techniques which the individual delegates can take back to their jobs.

L. E. Reynolds, The Connecticut Light and Power Co., Hartford, Conn., and Allan G. Mitchell, Philadelphia Electric Co., as chairmen of the respective accounting sections and divisions, have announced that the Detroit conference will feature two "all conference" events designed to interest all the visiting accountants.

The first general session on Monday afternoon will open with an address and greetings by A. V. McRee, secretary, Michigan Consolidated Gas Company in Detroit. This company and the Detroit Edison Company, which will act as joint hosts to the conference, are arranging special visits to many of their accounting departments.

An important event on the first day will be an address by Professor Sumner H. Slichter, economist, Harvard University, and chairman of the research

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Meet the men behind the scenes



A. B. Dilworth



J. G. Hoffman



D. W. Peterson



H. S. Hahn



R. F. McGlone

● **General Accounting Subcommittee on Functional or Responsibility Accounting**—Chairman A. B. Dilworth, Northern Natural Gas Co., Omaha, Neb., explains his group's undertaking as "A series of articles describing systems of responsibility accounting for small and large utilities. It will include a manual, a mechanical, and a combination manual and mechanical method." The final report is to be released at the Spring Conference.

● **General Accounting Subcommittee on Protection and Preservation of Records**—Chairman J. G. Hoffman, Consolidated Gas Electric Light and Power Company of Baltimore, Baltimore, Md., and his group are studying methods for controlling, filing, pre-

serving and disposing of records. The results of these studies will be divulged at the Detroit Conference in April of 1949.

● **General Accounting Subcommittee on Budgeting and Forecasting**—Chairman Donald W. Peterson, Minneapolis Gas Co., Minneapolis, Minn., reports that his group is studying the techniques used by various utilities in assembling and preparing all types of budgets and forecasts. Special emphasis is being given to methods of projecting or estimating sales volumes and revenues, as well as to the importance of preparing budgets in this period of rapidly changing conditions. The completed digest will be presented at the 1949 Spring Conference.

● **Customer Collections Subcommittee on Company Practices**—Chairman Harry S. Hahn, The Ohio Fuel Gas Co., Columbus, Ohio describes his group's undertaking as follows:

"Whenever two or more credit men from different companies get together they usually show an eagerness to find out what the other fellow is doing. So that this common desire might be satisfied, an organized discussion of various company practices is being planned for the Customer Collections Luncheon Meeting at the Spring Accounting Conference to be held in Detroit in April."

Mr. Hahn appropriately has labeled this luncheon-table discussion "Talkin' Shop."

● **Customer Accounting Subcommittee on Indispensable Practices and Records**—Chairman Ralph F. McGlone, The East Ohio Gas Co., Cleveland, Ohio declares that his group is trying to develop some constructive material, to be presented in an unusual and non-ponderous manner—it might even be a little humorous. He appropriately refers to this study as the "Sacred Cow" which he hopes will at least produce a few quizzical looks at the spring meeting. It is rumored that this "Sacred Cow" grazes in strange pastures and thrives upon choice nectar. It is possible that at this meeting the "Sacred Cow" will meet a "Sacred Bull".

morning have been reserved for separate committee and subcommittee meetings covering general accounting, plant accounting, depreciation accounting, internal auditing, and materials & supplies. These "how to do it" sessions continue to grow more and more popular with the industry's accountants. In the past, lively discussions have resulted and the order of business this year will be on the same high plane.

A second important "all conference" event will be the dinner meeting which will occupy the customary Tuesday evening spot on the program.

Current tax problems will receive close attention at the taxation accounting meeting on Wednesday morning. The agenda for this important session includes summarization of recent leading tax cases, tax problems arising out of pension plan changes, capital versus maintenance trends in the tax field, recent federal tax proposals and developments, and discussion of special tax problems.

The Customer Activities Accounting Group will open its session on Tuesday morning with a cooperative meeting directed by Paul E. Ewers, Michigan

Consolidated Gas Co., Detroit, and R. G. Schneider, Virginia Electric and Power Co., Richmond, Virginia. This promises to be one of the most contributive and most outstanding customer activities meetings. All the customer committees have assisted in making the arrangements and a promising assortment of subjects and speakers is planned. Business office standards will be studied, work simplification discussed, and the benefits from managing a customer accounting department explained. Reports will be presented on basic collection practices and customer activities organization.

Tuesday noon and afternoon of the customer activities session are reserved for luncheon meetings of the Customer Accounting Committee, Credit and Collections Committee, and Customer Relations Committee. Luncheon-table discussions have been scheduled and it is expected that the speakers and guests will "let their hair down" during the informal get-togethers.

Another cooperative meeting on Wednesday will bring to a close the customer activities session. Chairmen of the respective committees and sub-

committees have developed a program for this finale which is expected to keep all guests engrossed until adjournment time.

The third edition of the accounting machine and office equipment exhibit which was revived during the Buffalo meeting is expected to be even larger and more impressive than before. This exhibit alone is deemed by many accountants to be worth the journey to the annual spring conference.

Sales meetings

(Continued from page 24)

turers associated with it. With a different approach or presentation, even material presented previously can be made to seem new.

A most important point to consider is correct timing. Keep the session moving and close before it becomes tiring. Good things usually come in small packages.

Thus the sales meetings that click are the ones that best show the salesman how to get the order.

Nashville delegates will tackle sales problems of industrial and commercial gas fields

Conference program completed

For the first time in many years the American Gas Association Sales Conference on Industrial and Commercial Gas will be held in a Southern city. Nashville, Tenn., with its wealth of historical lore and quaint charm has been selected for the 1949 meeting. This annual meeting of the Industrial and Commercial Gas Section is the only combined activity that is national in scope, and the only Section affair that offers the opportunity to all industrial and commercial gas men to meet together and discuss the sales problems of their respective phases of the gas business.

The three-day conference will be held in the Andrew Jackson Hotel, April 5-7, and the program includes many of the timely subjects confronting gas men today. The program has been divided into a Commercial Gas Day on April 5, a general session on the morning of April 6, and in the afternoon concurrent symposiums on industrial and commercial subjects. The last day, April 7, will be Industrial Gas Day.

Bernard T. Franck, chairman and D. W. Reeves, vice-chairman, Industrial and Commercial Gas Section, will alternate in presiding at the various sessions.

On Commercial Gas Day one of the important subjects to be discussed will be "Simplified Sizing for Restaurant Water Heaters for Dishwashers." J. Stanford Setchell, A. G. A. assistant utilization engineer, will tell how this can be accomplished and how the gas man in turn can present proper sizing to a local contractor making water heater installations.

In connection with volume water heating, Harry B. Wilson, The Brooklyn Union Gas Co., and E. E. Magnuson, Eclipse Fuel Engineering Co., Rockford, Ill., will jointly present a paper on "Developments in Storageless Water Heating." Of special interest to gas men associated with commercial cooking will

be the "Report on Investigation of Gas and Electric Commercial Kitchens" by Frank H. Trembley, Jr., The Philadelphia Gas Works Co., and chairman, A. G. A. Subcommittee on Commercial Equipment Tests.

Uses of gas that represent an excellent load factor even though they are not of great volume, will be discussed under an all-inclusive heading, "Diversified Commercial Sales." The talks will cover air conditioning, laundries, garages, bottling plants, tailor shops, apartment house water heating, dairies and rug drying by the following speakers experienced in their respective lines: L. J. Fretwell, Oklahoma Natural Gas Co.; John H. Mikula, Milwaukee Gas Light Co.; G. C. Evans, G. C. Evans Sales Co., Little Rock, Ark.; J. E. Gross, Public Service Electric & Gas Co., Newark, N. J.; A. V. Lendemann, Mears-Kane-

Ofeldt, Inc., and G. A. Seale, Consolidated Edison Co. of New York, Inc.

Another subject that promises to hold the attention of men at the conference will be the paper by J. Edward Coan, Middleby-Marshall Oven Co., on "Modern Gas Ovens for the Retail Bake Shop." There will also be an informative talk on "Trends in School Kitchens" by Irene Burba, supervisor, Nashville city school lunchrooms. The problem of school feeding programs should be given earnest consideration by all commercial gas men. The first day's session will close with a showing of the Section's new moving picture, "Where Food is Finest."

The general session on Wednesday morning will include talks on selling phases of the industry by a representative of Surface Combustion Corporation and by Milton J. Firey, manager, Con-



Historic Nashville will be site of 1949 Sales Conference on Industrial and Commercial Gas

gress Hotel, Baltimore. During this session a ceremony, which is rapidly becoming a tradition, will take place—the presentation of certificates of life membership in The Industrial and Commercial Hall of Flame to five men for outstanding contributions to the Section and the industry.

On the afternoon of the same day, concurrent symposiums on industrial and commercial subjects will be held. One symposium, presided over by L. E. Biermiller, Consolidated Gas Electric Light and Power Co. of Baltimore, will include case history reports on "High Speed Heating" presented by C. C. Eeles, The Ohio Fuel Gas Co., Toledo; E. A. Ferkert, Gas Appliance Service Inc., Chicago; C. H. Lekberg, Northern Indiana Public Service Co., Hammond, and James Kniveton, Selas Corp. of America, Philadelphia. A general discussion will follow.

Another phase of industrial applications will be "Galvanizing by Gas" participated in by E. B. Freeman, Central Indiana Gas Co., Muncie; Paul R. Dryer, The Peoples Gas Light & Coke Co., Chicago, and E. J. Funk, Jr., The C. M. Kemp Mfg. Co., Baltimore, followed by another general discussion.

On the commercial side of the picture, the symposium topic will be one that has been the subject of grave concern throughout the gas industry. D. W. Reeves will preside. "Servicing Southern Style" will be presented by Terry Hart, Nashville Gas and Heating Co.; Oscar C. Warren, Alabama Gas Co., Birmingham, and K. O. Dupree, American Stove Co., Atlanta. General discussion will follow.

In keeping with the theme of Tuesday's sessions, the topic "Selling Is Still Important" will have as speakers before the discussion, James V. Hall, Northern Indiana Public Service Co., Hammond, as moderator; E. V. Fineran, Washington Gas Light Co.; J. R. Delaney, The Cincinnati Gas and Electric Co., and J. D. Haverkamp, New Orleans Public Service, Inc.

Industrial Gas Day on April 7 has both morning and afternoon sessions packed with timely topics. One of the most important aspects of industrial gas applications and one that should be given primary consideration by all industrial gas men will be discussed by C. George Segeler, A. G. A. utilization engineer, under the heading "Protective Devices and Their Applications."

"Radiant Gas Burners" is the title of

a paper to be presented by J. D. Keller, Associated Engineers, Pittsburgh. This will be followed by a talk on "Modern Core Baking Ovens" presented by

Charles H. Barnett, Foundry Equipment Co., Cleveland.

Something new in subject matter at a conference will be the talk by W. F.

Food service group outlines program

A COMPREHENSIVE PROGRAM for the Industrial and Commercial Gas Section's Food Service Equipment Committee was drawn up at a recent meeting of the Sales Promotion Subcommittee, E. V. Fineran, Washington Gas Light Co., chairman.

Plans call for gas industry representatives periodically to check the main offices of chain organizations in order to keep the gas story before persons responsible for purchasing cooking equipment. Details of this plan will be developed for approval by the Managing Committee.

The subcommittee also approved the idea of a series of publications telling the advantages of gas utilization to the volume cooking field. One of the booklets will be built around "The Alfonso Story" concerning

a change from electric to gas equipment and the results. Others will be "Sizing Water Heaters" as applied to dishwashing facilities, and the care and maintenance of commercial cooking equipment illustrated with cartoon posters. The subject of meat shrinkage tests will provide material for another booklet.

A novel "give-away" piece in the form of a book mark with time and temperature tables for restaurant cooking will be ready for distribution at the Restaurant Show in Atlantic City this May. Each book mark will carry A. G. A. identification and a blue flame.

The subcommittee also approved a survey to be made of member companies on the need for an A. G. A.-supported national sales campaign on commercial cooking equipment. The campaign is being considered for 1950.

Midwest Industrial Gas Council elects

BERT H. ROBERTS, Minneapolis Gas Co., Minneapolis, Minn., was elected chairman of the Midwest Industrial Gas Council at the group's annual meeting in Chicago on January 28. The session was attended by industrial gas men from all sections of the Middle West.

Fred C. Utterback, Public Service Co. of Northern Illinois, Chicago, was elected vice-chairman, and Paul F. Gibson, Western United Gas & Electric Co., Aurora, Ill., was elected secretary-treasurer.

The morning session opened with an informative talk on "Electronic Flame Protective Devices" and "Underwriters' and Factory Mutual Requirements" by Ralph D.

Allen, Minneapolis-Honeywell Regulator Company.

Humorous cartoons and skillful showmanship were used by Raymond W. Fenton, The Peoples Gas Light and Coke Co., Chicago, in stressing the importance of "Publicizing Industrial and Commercial Gas." In another featured address, Larry Shomaker, Northern Natural Gas Co., Omaha, Nebr., spoke on "Future of Industrial Gas from Pipeline Companies' Point of View."

The council will hold a two-day session in Waukegan, Ill. on June 2 and 3 under the sponsorship of the North Shore Gas Company



New officers of Midwest Industrial Gas Council: Fred C. Utterback, Chicago (left), vice-chairman; Bert H. Roberts (center), Minneapolis, chairman; Paul F. Gibson (right), Aurora, Ill., secretary-treasurer

Barston, Gas Atmospheres, Inc., Cleveland, entitled "Gas Atmospheres in the Paint, Varnish, and Chemical Industries." This promises to be one of the most informative papers of the day.

There is a large potential market for efficient application of gas for a highly specialized field in "Speeding Up Production in the Textile and Paper Industries." Possibilities for expansion of gas sales in these fields will be described by G. R. Van Kampen, Red-Ray Manufacturing Co., New York. "The Surge Method of Paint Drying" will be discussed by a representative of R. C. Mahon Co., Chicago, concluding the session.

On Tuesday, meetings of the Industrial Processing Committee and the Metals Committee will be held. The meeting of the Commercial Processing Committee will be held on Thursday, April 7.

No conference would be complete without luncheons and dinners. On Tuesday, April 5, a luncheon will be held in the Ball Room of the historic Maxwell House. Guest speaker for that occasion will be the popular and dynamic Nashville industrialist, Lipscomb Davis, president of the Davis Cabinet Company. His subject will be "What Makes America Great."

The Hermitage Hotel will be the scene of Thursday's luncheon. Cecil Sims, a prominent local attorney will speak on "State Rights vs. State Responsibility." Headline acts are on the bill for the Wednesday evening dinner entertainment (no speeches) with Minnie Pearl in the star role. She will be recognized by all who listen to the nationwide radio program, "Grand Ole Opry," and is an outstanding exponent of native Southern wit and humor. Other acts will be hillbilly skits and music by Odie and Jodie; Jimmy Selph with his "geetah"; and Milton Estes with his own band, "The Musical Millers" in a "different" show. Just before the dinner a friendship room reception will be sponsored by gas appliance manufacturers to round out the social evening.

Requests for reservations should be made immediately to the Andrew Jackson Hotel, Nashville, Tenn., for the 1949 A. G. A. Sales Conference on Industrial and Commercial Gas, specifying time of arrival and time of departure. Be sure to include your full name and company affiliation.

Human relations

(Continued from page 5)

and might wreck the government that has offered men more material wealth and more freedom than any other ever conceived.

Some of the reasons I would spend more time on human relations in industry, if I had my life to live over, are apparent. Some aren't. The most obvious is that a deeper study of human relations would have brought more industrial peace to my plants, although my record has not been bad. On the contrary, compared to many other industrial managers, I have been lucky to have had what could be called almost unbroken peace. But I have recognized that there were many things I left undone and that I have done many things that could have been carried out in a different manner with greater effect.

The second most obvious reason is that a continuing and more thorough study of human relations would have brought me more lasting friendships with production workers and more real satisfaction from my work. Here, again, it is merely a matter of degree. I have many friends among those who work with me, but I could have had more. I've learned that human contacts, on the worker level, can be the most exciting and the most thrilling part of an industrial management job.

Basic techniques

A study of human relations gets down to the very bases of production techniques, of incentives and their effect on workers of all religions, of the various motives that activate our fellow-men, of the challenges that are implicit in almost every labor-management contact.

One big thing I have learned is that business must dodge every hint of adopting a paternalistic attitude toward its workers.

Business men might go into humble homes in time of birth or death, might walk home with their workers, might send money in time of need. But if there is ever a hint that this is being done in a paternalistic spirit, for ulterior or selfish reasons, the business man is in a thousand times worse shape, psychologically, than he would have been if he had never even spoken to the worker. Workers, I have observed, will turn on a paternalistic employer with more vengeance than they will on one who has treated them harshly without any equi-



Louis Ruthenburg, shown above at his desk, has spent many years studying employee relations

vocation through the years.

Another big thing I have learned is that most workers are not motivated primarily by money. Most of them make their friendships, do their best work, perform well for reasons far more important, intrinsically, to them than the money they are paid.

A third important fact I have learned is that strikes, or other flare-ups that tie production in knots, are the result of factors that have been at work for years. Few if any walk-outs can be really attributed to the obvious, surface difficulties which serve as the immediate cause. Nine times out of ten the sore is an old one and the irritation at hand—the apparent source of the trouble—is merely the straw that broke the camel's back.

Labor leaders and managers face the joint responsibility of carrying forward a great, sustained educational effort to convince all Americans of the basic economic and political facts of life: that we can divide only what we produce, that the welfare of workers, consumers and investors alike is dependent upon increased productive efficiency in every field, that we cannot have a nation half-slave and half-free economically any more than we could have one half-slave and half-free politically.

Emphasis on human relations will help us to assuage the incipient disturbances that can endanger our nation's physical plant and its system of representative government. Only constant study of all facets of human relations—and constant application of tried techniques—can bring us the kind of nation we all want, the kind we must have if we are to meet constant threats to our security from within and from without.

Practical facts about single-point ignition

BY FRANK H. TREMBLY, JR.

Assistant Sales Manager

The Philadelphia Gas Works Co.
Philadelphia, Pa.

In order that there can be no misunderstanding as to what single-point ignition represents, I would like to define it briefly. It is an expression coined to identify a range ignition system whereby the oven and broiler burners are ignited from the top burner pilot so that there is no gas pilot burning in the oven or broiler compartment during the long periods when they are not in use.

It is recognized that with certain top burner arrangements, more than one top burner pilot may be employed. Notwithstanding this, the term "single-point ignition" is still used, regardless of the number of top burner pilots. We hold no particular brief for this expression, and it is entirely possible that a better and more suitable name could be devised for this ignition system.

It is my hope that this paper will bring to the attention of the gas industry a realization of the possibilities and the practical application of this ignition system, and that the interest so developed will result in its early acceptance and use. This presentation is in the form of a progress report, showing the present advanced status of this form of ignition, and demonstrating the fact that it is now ready to be seriously considered by the industry.

We recognize that the current campaign in the publicizing and sale of gas ranges built to "CP" standards is an essential part of the promotional program of the gas industry. Of the specific points of advantage of such ranges, those pertaining to oven and broiler ignition have been, I believe, of the greatest interest to the industry. It is recognized by many in the industry that the performance of present ignition devices leaves room for improvement.

There was a time when the ignition of the entire gas range from only a

Presented at the 1948 American Gas Association convention before the Residential Gas Section.

single pilot was but a glimmer in someone's eye and but a hope that might someday be realized. Such an ignition system has been considered essential by many gas utility men to permit the full and unhampered development of the "CP" program, and to provide the gas industry with a range that would meet every competitive situation. Such an ignition system would be an improvement over existing systems, through the elimination of the use of a strongly competitive service for performing an essential function in the operation of the gas range, as in the case of electric ignition; and in the case of present forms of gas ignition, by the reduction of multiple pilots to but a single pilot. Such are the essential advantages of single-point ignition.

Background

In the early 1930's, some thousands of ranges of both console and table-top design were installed, utilizing single-point ignition. On manufactured gas, the flash-ignition was satisfactory, but difficulties with the types of safety pilot valves then available resulted in the discontinuance of this form of ignition. No further development work was done until about five years ago, when American Gas Association Research Bulletins 17 and 21 were released. After that, laboratory and field research work by utilities, range and valve manufacturers resulted in the present advanced state of development of single-point ignition.

The results today are beyond the

fondest hopes of five years ago. Consistent flashing from the top burner pilot to the oven or broiler burner is now obtained over any practical range of gas pressures and oven temperatures on both manufactured and natural gas, using identical flash tubes. This is indeed an accomplishment worthy of the interest and attention of the industry. Before discussing in detail the successful operation of this form of ignition, however, I wish to point out promotional advantages to the industry and customer benefits resulting from its use.

First cost—With the development of proper safety pilot valves, a range equipped with single-point ignition should be lower in first cost than one equipped with the electric ignition systems now in use, and reasonably comparable to the cost of a multi-point gas ignition range. This depends upon the type of valve used, and will be discussed in greater detail later.

In addition, we are not required to create an electric outlet every time a gas range built to "CP" standards is sold, as is the case with electric ignition. The cost of an electric outlet may double the cost of connecting the gas range. I must point out that with only an electric light or convenience outlet on the range, there is no obligation on the part of the utility to provide an electric outlet, as the range will perform all its functions without an electric connection.

Operating cost—It is a reasonable assumption that the gas range top burner pilot is fully accepted by customers and represents no disadvantage from a competitive or operating-cost standpoint. The single-point ignition range consumes no additional pilot gas, depending for its ignition entirely on the top burner pilot. It is lower in operating cost than the multi-point gas ignition range and fully comparable to that of the electric ignition range.

Servicing cost—Based on the experience of the industry to date, it is reasonable to expect that the cost of servicing a single-point ignition range will be lower than the cost of servicing an electric ignition range. Experience over the past two-and-a-half years in Philadelphia with approximately 300 single-point ignition ranges, indicates that the servicing expense of such ranges should be comparable to the cost of servicing a multi-point gas ignition range.

Customer advantages—The oven and broiler of the single-point ignition

range will ignite regardless of electric power failure. The oven and broiler compartments are at room temperature when not in use and hence can be used for storage, should the customer desire.

No heat from additional pilots is released in the kitchen. There is no added operating cost for maintaining additional permanent gas pilots. Low servicing expense means greater customer satisfaction through uninterrupted range performance.

Promotional advantages—The range is recognized by the gas industry as an appliance that is subject to heavy competitive attack. It is not only common sense, but good business judgment as well, to put ourselves in the most favorable position to meet such an attack and to take to the field and advance against our opposition. Existing range ignition systems offer many promotional advantages to our competitors, while single-point ignition offers advantages only to the gas industry and its customers, and none to its competitors.

Single-point ignition removes the serious promotional disadvantage of having a highly competitive service perform an essential operating function on the most advanced type of gas range. With single-point ignition, the modern gas range built to "CP" standards, gives the customer complete cooking service regardless of the availability or possible failure of the electric supply.

Single-point ignition eliminates the legitimate criticism of competitive sales agents who may point out to customers the personal discomfort, as well as fuel wastage involved, in the operation of multiple pilots, with the currently accepted type of multi-point gas ignition.

Instead of omitting reference to pilots or apologizing for them in the sale of a modern gas range built to "CP" standards, single-point ignition permits an interesting floor demonstration of vertical flash tube ignition, that becomes an attractive and positive sales feature for the range. Experience on our own sales floors has indicated a lively and favorable customer interest in the flashing operation.

In summary, I can say that single-point ignition possesses all of the advantages of electric and multi-point gas ignition ranges, with none of their disadvantages. It gives no aid or comfort to our chief competitor, as contrasted with the other two methods of ignition. It is my opinion that in a freely com-

petitive market, where all three types of ignition are offered without reference or prejudice, that single-point ignition ranges because of their inherent advantages will become the dominant type and will ultimately force the others off the market.

With these advantages recognized and subject to but little controversy, the question may well be asked, "Why has single-point ignition not been generally accepted by the gas industry?" It is a fair question, and I believe the answer to be as follows:

General lack of information—Field experience with single-point ignition and knowledge of its operation has been limited to but a few utilities and range manufacturers. This presentation marks its official introduction to the gas industry and has been properly delayed

tirely related to the type of valve under discussion. Certain designs, involving the automatic "cocking" of the thermocouple type safety pilot, could be more expensive than present types. Other valves of the self-acting type however, indicate a cost reasonably comparable to that for multi-point ranges, and lower than the cost for the electric ignition systems currently used.

There is no reason why valves for single-point ignition flashing systems should be unduly expensive. I am convinced that with single-point ignition receiving greater interest and acceptance by the gas industry, the ingenuity of valve manufacturers will be stimulated and lower cost valves of a suitable type purchased.

Lack of development by valve manufacturers—Lack of information and the uncertainty in the industry regarding single-point ignition have until now retarded the development of suitable oven safety pilot valves by recognized valve manufacturers. Their research has been largely in other fields, where greater gas industry acceptance has been achieved. As the situation exists today, the absence of production models of oven safety pilots of a type suitable for single-point ignition is the greatest hindrance to its early use.

The problems related to satisfactory flashing to the oven and broiler on manufactured and natural gas have been solved and further progress can only be made with the assistance of the valve manufacturers. I appeal to those valve manufacturers whose equipment is not now adapted to single-point ignition to direct their research program in this direction, in the further support of this program and in the advancement in the art of oven ignition.

Present status at A.G.A. Laboratories—I am glad to be able to state that substantial progress has been made toward incorporating single-point ignition specifications in the A.G.A. Range Approval Requirements. A demonstration of single-point ignition operation on both manufactured and natural gas was made before the Domestic Range Approval Requirements Subcommittee at the A.G.A. Testing Laboratories on January 20, 1948, resulting in a recommendation that suitable approval requirements be developed for testing and approving ranges equipped with single-point oven and broiler ignition.

The A.G.A. Laboratories tested ranges



Frank H. Trembley, Jr.

until this system was fully ready for the serious consideration of the industry.

Uncertain as to operation on natural gas—Many utilities and range manufacturers have accepted without question its satisfactory operation on manufactured gas, but believe that it was impractical for natural gas. It can be stated that today, operation can be obtained on natural gas comparable to that on manufactured gas. This removes the principal uncertainty connected with the national application of the single-point ignition flashing system. No longer is this ignition system limited to manufactured gas.

High first cost—Some sections of the gas industry may have been misinformed as to the first cost of single-point ignition. The question of first cost is en-

Father and son spotlight new range



At company's annual sales meeting, J. L. Moffat (left), president, Moffat, Ltd., Weston, Ontario, demonstrates cake baking on an 1898 model gas range which he designed and sold around the world. His son, D. R. Moffat, vice-president and general manager, shows features of the first new line of automatic gas ranges built to "CP" standards which the firm has announced since the last war

so equipped in accordance with the Committee's recommendations and has prepared tentative approval requirements for single-point-ignition equipped ranges. These have been approved by the Domestic Range Approval Requirements Subcommittee and have been distributed to the industry for criticism. We hope that in the near future ranges so equipped may be officially tested and approved by the A.G.A. Testing Laboratories.

Present status with range manufacturers—A number of forward-looking range manufacturers have conducted their own research programs on single-point ignition. Six range manufacturers have a total of about 300 field installations of single-point ignition ranges in Philadelphia, with some additional trial installations in other cities.

In the exhibition hall at the 1948 A.G.A. convention, six range manufacturers displayed experimental single-point ignition ranges in their booths. Certain of these manufacturers are ready to produce single-point ignition ranges as soon as they can be tested and approved by the Laboratories under the newly developed A.G.A. Approval Requirements, and as soon as satisfactory types of safety pilot valves are available. With greater acceptance of single-point

ignition on the part of the gas utilities, many other range manufacturers will undoubtedly adopt this type of ignition.

Operation on manufactured gas—Satisfactory operation of single-point ignition ranges on manufactured gas is generally accepted by the industry. Satisfactory flashing in a range is obtained over the full scale of oven temperatures up to 500° F, and with gas pressures varying in accordance with A.G.A. test procedure. The flashing time to the oven or broiler burner level is from two to four seconds, with the oven burner igniting within 15 to 45 seconds after the cock is turned on, depending upon the type of valve used.

Ample field experience has demonstrated complete customer satisfaction with this operation. Self-acting types of oven safety pilot valves now used on electric ignition and multi-point gas ignition ranges perform equally well with single-point ignition on manufactured gas.

Operation on natural gas—Uncertainty regarding operation on natural gas has been the principal handicap to the general acceptance of single-point ignition by the gas industry. With the improvements made in flash-tube design over the past five years, and with the experience gained on manufactured gas,

it is now possible to obtain comparable flashing results on natural gas, over the same wide range of temperatures and gas pressures as with manufactured gas.

In order to give further assurance of satisfactory operation on all types of natural gas, pure methane has also been used in these tests. I am glad to report that comparable flashing results have been obtained with methane as well, even though it is recognized as one of the most difficult gases to flash.

The only difference between flashing on manufactured and natural gas is that with natural gas it is necessary to reduce or entirely shut off the flashing gas when the oven or broiler is ignited. This requires a modified type of safety pilot valve that is not now in commercial production by valve manufacturers, although there are a number of experimental valves in use that will satisfactorily do this.

With present designs, identical flash tubes can be used with both natural and manufactured gas. Identical valves can be used as well, provided they are of the natural gas type. The only change is in the gas orifices used, and that is a minor matter.

Thus single-point ignition ranges will provide no assembly or warehousing problem for the range manufacturer, which is contrary to past opinion on this subject. Ranges for natural or manufactured gas can be produced on the same assembly line using identical parts except for orifice size. This is another strong argument from the standpoint of the range manufacturer for the adoption of single-point ignition.

It is my hope that the industry will come to the realization that single-point ignition has passed from the stage of an interesting experiment to the threshold of practical application. Further, that it will be recognized as a practical form of range ignition that has undisputed customer advantages, and is one that can make a substantial contribution to the security and well-being of the industry.

With the awakened interest and endorsement of the gas utilities, valve and range manufacturers will contribute their share to the commercial application of this improved ignition system. I am convinced that with such support, it will take its proper place as a tried and accepted form of gas range ignition, to the advantage of the industry and the still greater acceptance of gas for cooking purposes by our customers.

Cincinnati delegates will honor Jacob D. von Maur on silver anniversary of first meeting

Distribution birthday planned

The silver anniversary of American Gas Association distribution conferences will be held at the Netherland Plaza Hotel in Cincinnati, Ohio, April 4-6, under the joint sponsorship of the Technical Section's Distribution, Corrosion and Motor Vehicle Committees.

In honor of the first chairman of the Distribution Committee who in 1924 originated the idea of yearly distribution meetings, the conference will be named for Jacob D. von Maur, former engineer of distribution, and now consultant, The Consumers Gas Co. of Toronto. A special subcommittee composed of Frederick A. Lydecker, Public Service Electric & Gas Co., Newark, N. J.; C. S.

and the Jacob D. von Maur testimonial, H. Carl Wolf, A. G. A. managing director, will deliver a message from the Association.

As one of the principal speakers of the conference, Dr. Leo Wolman, professor of economics at Columbia University, will address the opening session on the timely subject of industrial relations. The speaker is a member of the research staff of the National Bureau of Economic Research, a former chairman of the N.R.A. Labor Advisory Board, a member of the National Labor Board, and chairman of the Automobile Labor Board.

Another featured address will be pre-

day will be directed by F. J. Hall, Michigan Consolidated Gas Co., chairman of that committee. R. J. Ott, The Philadelphia Gas Works Co., committee chairman, will preside at luncheon meetings of the meters and metering group on both days.

Other luncheon conferences on Monday and Tuesday and their presiding officers will be as follows: *Distribution Design and Development*—V. F. Bittner, The Peoples Gas Light and Coke Co., Chicago, Ill.; *Work on Consumers' Premises*—R. B. Barger, The Hartford Gas Co., Hartford, Connecticut.

Motor vehicle luncheon conferences on Monday and Tuesday will be directed by F. M. Rudman, Michigan Consolidated Gas Co., and Linn Edsall, Philadelphia Electric Co., chairmen of the American Gas Association and Edison Electric Institute committees. A third luncheon meeting on Wednesday will be directed by J. L. Coyne, Rochester Gas & Electric Corp., vice-chairman, A. G. A. Motor Vehicle Committee. W. H. Head, Public Service Co. of New Hampshire, vice-chairman, A. G. A. committee, will lead a motor vehicle conference on Wednesday morning.

P. W. Rogers, The Ohio Fuel Gas Co., will lead a joint A.G.A.-E.I. motor vehicle symposium on Tuesday morning, and W. H. Head, Public Service Co. of New Hampshire, will preside at a similar motor vehicle conference the following morning.

L. K. Richey, Michigan Consolidated Gas Co., who has been active on the A. G. A. Accident Prevention Committee for many years, will open the Tuesday general session with a talk entitled "Can I Turn My Back?"

Recent methods of automatic regulator control will be discussed by Russell H. Freeman, Public Service Co. of Colorado, followed by standardization of appliance parts, (*Continued on page 40*)



Jacob D. von Maur (left) who will be conference guest of honor; Dr. Leo Wolman and F. Glen Shoemaker, speakers; F. M. Rudman and S. E. Trouard, chairmen, Motor Vehicle and Corrosion Committees

Goldsmith, The Brooklyn Union Gas Co., and H. Bruce Andersen, The Philadelphia Gas Works Co., chairman, has completed arrangements for an imposing tribute to Mr. von Maur.

Three morning general sessions, numerous luncheon conferences, and meetings of the Corrosion and Motor Vehicle Committees will comprise the work sessions of the distribution meeting.

J. M. Pickford, Northern Indiana Public Service Co., Hammond, chairman, A. G. A. Distribution Committee, will open the Monday general session. Following greetings by W. C. Beckjord, president, Cincinnati Gas & Electric Co.,

sented by F. Glen Shoemaker, chief engineer, Detroit diesel engine division, General Motors Corp., on the subject "Economy and Application of Diesel Engines." Ever growing in popularity, the Diesel engine is of vital interest both to motor vehicle men and other members of the Technical Section.

Corrosion luncheons on Monday and Tuesday and a corrosion conference Tuesday morning will be conducted by Sidney E. Trouard, New Orleans Public Service Co., chairman, A. G. A. Corrosion Committee.

Luncheon conferences on construction and maintenance on Monday and Tues-

Industry news

Heating and ventilating directory published

JUST OFF THE PRESS is the 1949 edition of "Heating and Ventilating Buyers' Directory," a 356-page volume covering the fields of air conditioning, piping, heating, refrigeration, ventilating and air sanitation. The publication is primarily a product directory listing the names of manufacturers or sources of equipment, supplies, and services.

A new section in the directory lists local

sales representatives and branch offices of manufacturers. A trade-name section includes both current and obsolete trade names together with the products with which they are associated and names of the manufacturers.

The directory is published by The Industrial Press, 148 Lafayette Street, New York 13, N. Y., and sells for one dollar.

N.S.R.B. Group sees increase in gas sales

A 50 PERCENT INCREASE in total utility sales of all types of gas by 1952 is forecast in a staff report of the power and utilities division, National Security Resources Board. In a report to Acting Chairman John L. Steelman, the gas industry task group pointed out that as long as current price relationships continue, "with gas in many instances the cheapest as well as the fuel most preferred for its inherent qualities, there will be virtually no limit to the total consumer demands for it. Demand trends for gas, therefore, will depend largely upon the future

structures of gas, oil and coal prices in relation to each other."

The report noted the industry's five-year expansion program which should enable total utility gas sales of about 4.629 trillion cubic feet of gas a year compared with 3.098 trillion cubic feet in 1947. The chief obstacle to the three-billion dollar program, the board said, is the continuing acute shortage of steel pipe.

Members of the gas industry technical group which prepared the report include Alexander Macomber, Gas Service, Inc., Bos-

ton, chairman; W. E. Caine, Texas Eastern Transmission Corp., Shreveport, La.; J. A. Farber, The Peoples Gas Light and Coke Co., Chicago; Leslie T. Fournier, Panhandle Eastern Pipe Line Co., New York; John Heyke, The Brooklyn Union Gas Co., New York; C. E. Loomis, The Columbia Gas System Inc., New York; H. V. Wakefield, Jr., Tennessee Gas Transmission Co., Houston, Texas, and Roy A. Wehe, Pacific Coast Companies, San Francisco, California.

The report was submitted by Edward Falck, chief consultant on power and utilities.

A.G.A. on inter-society corrosion group

THE American Gas Association is represented on a newly organized Inter-Society Corrosion Committee of The National Association of Corrosion Engineers by R. F. Hadley, Susquehanna Pipe Line Co., Philadelphia, and

W. R. Fraser, Michigan Consolidated Gas Co., Detroit. Mr. Fraser is chairman, A. G. A. Technical Section and a past-chairman of the A. G. A. Corrosion Committee.

Some activities of the former American Co-

ordinating Committee on Corrosion and the N.A.C.E. Committee on Relations with Other Technical Societies, will be carried on by the new group which succeeds both of the older committees.

Brooklyn water heater sales increase

C ELEBRATION was the order of the day at The Brooklyn Union Gas Company recently, for when last year's sales figures were announced it was discovered that gas water heater sales had far outrun the previous record. A total of 7,325 gas water heaters were sold in 1948, more than double the sales for prewar years and more than 48 percent above the 1947 figure.

Company officials give the credit for these record sales to the Magic Carpet Prize

Thriller Contest, one of the most successful promotions ever undertaken by the utility. The contest opened April 1, 1948 and closed on October 16. Its success was due largely to the close coordination of such factors as newspaper advertising, broadsides, manufacturer cooperation, extra sales efforts of dealers and salesmen.

As a result of this coordination the contest's target of 7,000 water heater sales in 1948 was met and passed.



Members of The Brooklyn Union Gas Company and manufacturer representatives who participated in the utility's Magic Carpet Prize Thriller Contest. Standing (left to right): W. H. Harper, H. A. Diekmann, J. J. Blanchfield, E. H. Perry, T. O. Mikolasy, J. B. Frost, C. Wilkinson, G. Hutter, and S. L. Bowen. Seated (left to right) D. P. Carlin, J. A. Reynolds, B. O. Brown, J. E. Heyke, Jr., J. J. Deely, W. B. Henson, D. S. Whamond, J. F. Howley, and M. H. Landon, Jr. The 1948 contest resulted in record sales

West Virginia pipeline

ATLANTIC SEABOARD CORPORATION and Virginia Gas Transmission Co., Charleston, W. Va., both subsidiaries of The Columbia Gas System, Inc., have been authorized to construct additional natural gas transmission facilities to supply increased requirements of existing customers in West Virginia, Virginia, Maryland, and District of Columbia.

Authorized are 268 miles of 26-inch pipeline extending from Clendenin, W. Va. to Rockville, Md., a multiple crossing of the Potomac River near Rockville, and additional measuring and regulating equipment at various points on the line. Total cost of the facilities is estimated at \$20 million. The line is to be completed by March 1, 1950.

Back issues wanted

INFORMATION regarding copies of the following American Gas Association publications which are available for sale should be directed to E. S. Pettyjohn, director, Institute of Gas Technology, 3300 Federal St., Chicago 16, Ill.: (1) *A. G. A. Proceedings* for 1936, 1938, 1939, 1942, 1943, and 1944, (2) *A. G. A. Natural Gas Department Proceedings* for 1933, 1934, 1942 and 1943, (3) *A. G. A. Technical Section Sessions* for 1920 and 1922.

A.G.A. at Heating and Ventilating Show



Clifford E. Hall, A.G.A., explaining recent American Gas Association exhibit in Chicago to Harold Brownell, Joseph Volkstorf, Jr., David Monson, and Gus Mazarakis, all of The Peoples Gas Light & Coke Company. Display showed anticipated increase in daily plant capacity of gas utility industry

Transcontinental gets line pipe



Claude A. Williams (left), president, Transcontinental Gas Pipe Line Corp., and Lloyd Earl, vice-president in charge of production for Consolidated Western Steel Corp., talking over production problems concerning the pipe for 1,840-mile natural gas pipeline which will be constructed from Texas to New York. More than 470,000 tons of steel comprising 20,000 carloads will be required

New building opened in Montana



This modern new headquarters building has just been completed for Billings Gas Company

ONE OF THE MOST MODERN public utility buildings in the Northwest has just been completed and occupied by Billings Gas Co., Billings, Montana. J. E. Moore is president, treasurer and general manager of the company.

Of reinforced concrete construction, the new structure contains approximately 11,500

square feet of floor space plus an auditorium, and is entirely fireproof. Novel features include a pneumatic conveyor system for moving papers between offices, a paging system, and movable steel partitions to permit easy rearrangement of office space. A customer interview room next to the lobby and adjacent to the teller space is connected by intercom with all the customer accounting departments.

Designed primarily for employee instruction and training, the auditorium is equipped for projection of sound movies, slides and strips, and is also available for civic and community meetings. Grand opening of the building was marked by an "open house" attended by approximately 1,000 persons despite sub-zero weather and 12 inches of snow.

Since natural gas was introduced into Billings in 1922, the number of gas customers has risen from 2,207 to 12,358, and the annual sendout from about 67 million cubic feet to more than four billion cubic feet.

Gas measurement report

THE REVISED 1948 EDITION of "Gas Measurement Committee Report No. 2," prepared by the Gas Measurement Subcommittee of the Technical Research Committee of the Association's Natural Gas Department, is now available from A. G. A. Headquarters at \$1.50 a copy.

Originally issued in 1935 and reprinted in 1945, the report contains recommendations covering the use of orifice meters in the measurement of natural gas. An errata sheet with corrections included in the new edition will be sent free of charge to persons who wish to bring the 1945 edition up-to-date.

Philadelphia utility avoids

PHILADELPHIA ELECTRIC COMPANY'S 8,000 employees rounded out a full year of work in 1948 without a single fatal accident, according to Roy M. Godwin, director of safety. The last fatality occurred in November 1947.

The past year was the third in the company's history during which no fatalities were suffered among its employees. The previous safety records were made in 1941 and 1944.

Gas street lamps

TWO MEMBERS of the American Gas Association would like to secure old-fashioned gas street lamps for home decorative purposes. Anyone who can supply information about these lamps, including cost, condition, and location, please get in touch with the following:

Buell Duncan, vice-president, South Atlantic Gas Co., Orlando, Fla., who wants two gas street lamp frames to install in front of his home, and Lloyd C. Ginn, sales promotion manager, American Stove Co., 1641 South Kings Highway Blvd., St. Louis 10, Mo., who is looking for one gas street lamp complete with standard and frame.



Close-up of new safety lighting unit designed to prevent entrance of hazardous atmospheres

Air-pressure safety lighting unit devised

A NEW kind of safety lamp with possibilities for gas industry use has been announced. The fixture is of the enclosed type designed for operation with air pressure (about ten p.s.i. above atmosphere) in the lamp compartment to prevent the entrance of surrounding hazardous atmospheres. If for any reason the air pressure within the fixture falls below 3½ p.s.i., the lamp circuit is automatically interrupted by pressure-operated switches installed within the lamp compartment.

The reflector has a homogeneous, non-cor-

rosive finish and is designed to give an 8 percent reflectant coefficient. Lenses are heat-resistant and tempered. Maximum equilibrium temperatures range from 74°C at the top of the reflector to 121°C at the bottom of the lens at a 27°C ambient. Over-all dimensions of a 200-watt unit are approximately 12 inches in greatest diameter by 22 inches in height.

Further details of the safety lamp can be obtained from Safe Lighting, Inc., 90-16 Astoria Blvd., Jackson Heights, New York.

Pittsburgh Group proud of safety record

NEARLY 2,600 EMPLOYEES of the seven associated gas companies forming the Pittsburgh Group of The Columbia Gas System, Inc., reported an excellent safety record in 1948. According to W. H. Adams, safety director, the average accident frequency rate throughout the five-state area served by Group companies last year was 8.07. This figure represents the number of lost-time accidents per million manhours worked.

Mr. Adams indicated that the frequency

rate for all industries reporting to the National Safety Council was 13.26, and for the gas industry as a whole was 22.05.

Nearly 260 employees in two distribution districts of The Manufacturers Light and Heat Company worked a total of 455,818 hours in 1948 without a single lost-time accident. More than 100 employees in three gas production and transmission divisions worked a total of 136,456 hours last year with a perfect safety record.

Gas corrosion subjects listed

TITLES of papers to be delivered tentatively at a gas industry symposium during the 1949 conference of the National Association of Corrosion Engineers have been announced by Dr. N. E. Berry, Servel, Inc., Evansville, Ind., chairman of the technical program committee. The conference will be held in Cincinnati, Ohio, April 11-14, with

the gas industry symposium on April 14.

"Cathodic Protection of Gas Distribution Systems" will be discussed by A. W. Peabody and C. L. Woody, Ebasco Services Inc., New York; "Preparation of Reconditioned Pipe Surfaces for Effective Application of Bituminous Coatings," by O. C. Mudd, Shell Pipe Line Corp., Houston, Texas; "The Use of

the Thermo Generator for Cathodic Protection," by H. J. Findley, Eaton Manufacturing Co., Cleveland, Ohio; "Field Tests of Sodium Chromates and Alkalies for Controlling Corrosion in Gas-Condensate Wells," by C. Kenneth Eilerts, Bureau of Mines, Bartlesville, Oklahoma.

Laboratories safety booklet available

IMPORTANT SAFETY SUBJECTS such as good housekeeping, fire prevention and control, explosion and avoidable personal injuries, are discussed in the booklet "Safety is our Business!" published by the Safety Committee of the American Gas Association Testing Laboratories. Copies of this publication, which was prepared for use by the staff and by visiting manufacturer representatives, are still available from the Laboratories.

The booklet consists of the various gases employed in Laboratories operations and rec-

ommends precautions to be observed in their handling. Instructions for the proper installation and operation of various types of appliances in the course of their examination and testing, are outlined. The safety booklet emphasizes that laboratory operations are hazard free if properly performed, and closes with brief instructions for emergency first-aid measures.

The Laboratories have been inseparably identified with safety since they began oper-

ations. In fact the principal reason for their establishment was to provide an agency for the testing and approval of gas-burning appliances in the interest of public safety. In the testing of appliances submitted for approval, national safety requirements based on the American Standard Gas Safety Code are applied. All models approved must display the registered A. G. A. Laboratories Approval Seal which bears the legend, "Approved—Complies with National Safety Requirements."

A.G.A. Great Lakes Personnel conference

THE spring meeting of the Great Lakes Personnel Conference of the American Gas Association will be held at the Palmer House, Chicago, on March 11, according to L. A. Brandt, director of employee relations, The Peoples Gas Light and Coke Co., Chicago, and chairman, A.G.A. Personnel Committee.

Dr. Raleigh Stone, head of the industrial relations department, University of Chicago,

will be the guest speaker at the meeting to which all personnel executives in the Great Lakes area are invited.

Fred R. Rauch, vice-president and director of industrial relations, The Cincinnati Gas and Electric Co., has been appointed chairman of a nominating committee to present a slate of officers for the Great Lakes Personnel Conference for the coming year. Other

members of the committee which will nominate officers at the March 11 meeting are Clifford B. Boulet, director of personnel, Wisconsin Public Service Corp., and David R. Edwards, director of employee relations, Columbia Engineering Corp., New York.

The A.G.A. Great Lakes Personnel Conference is the most recently organized of the Association's regional conferences.

A.G.A. spurs drive

(Continued from page 4)

1,100,000 electric storage water heaters were sold—a ratio, of 1.6 to one in favor of gas.

A serious challenge to the automatic gas water heating load recently was raised by the electric utilities with a powerful national consumer activity "to sell a method of living—the electric way." Spearheading this drive is "The All-Electric Kitchen Promotion Program" offered by the Edison Electric Institute. All branches of the electric industry—utility, manufacturer, wholesaler and retailer are being encouraged to tie in actively.

In general, the entire program sells the electrical method of living, rather than specific appliances or individual

brands. In announcing it, E.E.I. said that it will "create the urge to own and the desire to use more electrical appliances, to the exclusion of other fuels."

With this challenge of a competitive fuel in mind, Mr. Gorman summed up the situation as follows: "The gas industry, the manufacturers and their outlets certainly are not going to take any nap! This year calls for an aggressive sales approach, and we are all set to widen the sales ratios to a more favorable picture for gas as a fuel for good, adequate, flexible, hot water service."

"All gas water heater salesmen and dealers this year are being enlisted to concentrate on selling customers hot water heating service, 'tailored-to-fit' individual needs," Mr. Gorman declared. "No two families require the same hot water services, and the supply of hot water must be arrived at on the

basis of the number of people in the house, how many baths and showers are in use, what household requirements have to be met. All of these requirements are best filled with a gas automatic water heater."

"Just as a salesman sells the required size of refrigerator, or a range for a particular home so will the 1949 gas water heater salesman sell the proper-sized automatic gas water heater."

Gas utilities are urged to tie in with the "Court of Flame" drive by sending their registrations to contest headquarters at Gas Appliance Manufacturers Association in New York, and by registering all gas water heaters that have been sold since January 1.

All gas company sales personnel and promotional forces should be mobilized in the campaign to protect and expand lucrative automatic gas water heating load.

OBITUARY

V. J. Altieri

chief chemist, Eastern Gas & Fuel Associates, Everett, Mass., a past-chairman of the American Gas Association Chemical Committee, died on February 10.

Mr. Altieri was born in Boston and graduated from the Massachusetts Institute of Technology in 1923 with a B.S. degree in chemical engineering. He then worked at M.I.T. as a research associate until he began work at New England Fuel and Transportation Company (now Eastern Gas & Fuel Associates) in 1924. From then until his death, his life was occupied by the development and operation of a modern coke plant and coke laboratory. His career was devoted to building a system of laboratory operation which depends for its authenticity on a sound base in the fundamentals of science and close cooperation with authorities throughout the world in the field of materials testing.

He served as chairman of the A. G. A. Chemical Committee in 1943-1944, and as member and chairman of numerous subcommittees from the time he joined the Association about 25 years ago. He also helped to complete a much-needed revision of the Gas Analysis and Light Oils Sections of the Gas Chemists Handbook. He was the author of well-known technical articles on coal expansion, stresses and strains during carbonization, and selections of coals for wartime carbonization.

Mr. Altieri was an active member of the American Gas Association, The New England Gas Association, American Society for Test-

ing Materials, A.S.T.M. New England District Council, American Chemical Society, American Institute of Chemists, and American Coke and Coal Chemicals Institute.

He joined the American Society for Testing Materials in 1934 and at the time of his death was vice-chairman, Committee D-16 on Industrial Aromatic Hydrocarbons, a member of Committee D-3 on Gaseous Fuels, a consulting member of Committee D-5 on Coal and Coke, and chairman, New England District Council.

William L. Ransom

for many years recognized as an authority on municipal and public utility as well as international law, died of a heart attack on February 19 while attending a conference at Harvard Law School.

Mr. Ransom graduated from Cornell Law School in 1905 and practiced law in Jamestown, N. Y., until 1907. Since moving to New York City in 1907, he held many civic and judicial positions including assistant secretary of the Public Service Commission from 1911 to 1913; justice of the City Court from 1914 to 1917, and chief counsel for the Public Service Commission for the First District in 1917 and 1918.

In 1919 he was retained by Consolidated Gas Company of New York to represent it in litigation connected with the famous "80-cent" gas case before the Federal courts and was instrumental in bringing the case to a successful conclusion. For the past 30 years Mr. Ransom and his firm have been attorneys for Consolidated Gas and its successor, Consolidated Edison Co. of New York, Inc., notably in rate and labor-management matters.

Mr. Ransom played an active part in the formation of the American Gas Association and served as chairman, A. G. A. Rate Fundamentals Committee for several years. He was

president of the American Bar Association in 1935 and 1936; editor-in-chief of the American Bar Association Journal from 1946 to 1948, and a frequent contributor to law and economics periodicals.

In 1945 he was advisor to the United States representative to the Permanent Court of International Justice at the San Francisco Conference. He was a member of the Council on Foreign Relations, the American Society of International Law, the International Law Association, the International Bar Association and many other bar associations and legal societies.

Mr. Ransom's first wife died in 1941. He is survived by four children, Mrs. Laurence W. Fairfax, William L., Jr., Robert C. and Mary L., and by his widow, Mrs. Elizabeth Erickson Ransom to whom he was married in 1944.

Howard S. Christman

sales manager, The Philadelphia Gas Works Co., died suddenly at his home in Devon, Pa., Thursday evening, February 17, 1949. Mr. Christman had served with the company 39 years, 16 of them as sales manager.

He was a past-president of the Pennsylvania Gas Association and had been active on many committees of the American Gas Association. At the time of his death he was a member of the A.G.A. National Advertising Committee. He was a graduate of Penn Charter School and the University of Pennsylvania.

He is survived by his wife, Mary Abbott Christman; three daughters, Mrs. Henry D. Beyea, Villanova; Mrs. Walter B. Shaw, Penn Wynne; Mrs. Benjamin L. Statzell, Wynnewood; a sister, Alice Christman, Philadelphia, and two brothers, Albert Christman, Philadelphia, and William Christman, West Collingswood, New Jersey.

Consolidated Edison elects board chairman



H. R. Searing

vice-president of the company since 1944. Harland C. Forbes, a vice-president since 1945, was elected executive vice-president.

Mr. Tapscott joined The New York Edison Co., a predecessor of Consolidated Edison, in

RALPH H. TAPSCOTT, president, Consolidated Edison Co. of New York, Inc. since 1937 was elected Wednesday, February 23 to the newly-created post of chairman of the board. Mr. Tapscott continues as chief executive officer of the company.

He is succeeded as president by Hudson R. Searing, executive



R. H. Tapscott



H. C. Forbes

1917 as assistant chief electrical engineer. He was made electrical engineer in 1925 and vice-president, The New York Edison and United Electric Light and Power Companies in 1932. When these companies were merged into Consolidated Edison in 1936 he retained the post of vice-president. In 1937 he was elected president and a trustee and in 1942 became chief executive officer.

From 1942 to 1946 he served as president of the New York Steam Corp., a subsidiary. He is now a director of that company as well as all other Consolidated Edison System Companies.

Mr. Tapscott received a B.S. degree in electrical engineering from Union College in 1909.

Mr. Searing joined The New York Edison Company in 1909 as a telephone operator. He transferred to The United Electric Light and Power Company and became a cadet engineer

in 1916 and assistant electrical engineer in 1923. In 1932 he was appointed general superintendent of distribution for the Edison and United Companies.

In 1939 Mr. Searing was made engineer of operation for Consolidated Edison and in 1940 was elected a vice-president. He has been a trustee of the company since 1944. He is a director of all Consolidated Edison System Companies and chairman of the board of the Consolidated Telegraph and Electric Subway Company.

Mr. Searing received a B.S. degree in electrical engineering from Cooper Union in 1916.

Mr. Forbes joined The New York Edison Company in 1924 as assistant to the chief electrical engineer. He became research engineer in 1928 and system engineer in 1932. He was elected an assistant vice-president of Consolidated Edison in 1940 and a vice-president in 1945. He was made a trustee of the company in 1948.

Mr. Forbes is chairman of the System Financial Advisory Committee and a vice-president and director of the New York Steam Corporation. He is a director, Westchester Lighting Company and Yonkers Electric Light and Power Company. He has served on committees of the American Institute of Electrical Engineers, the Association of Edison Illuminating Companies and the Edison Electric Institute.

Mr. Forbes was graduated from the University of New Hampshire in 1921 with a B.S. degree, and received an S.M. degree from Massachusetts Institute of Technology in 1923.

Personal and otherwise

Southern Indiana names vice-presidents

LECTION of A. B. Brown as vice-president and operating manager, and C. K. Graham as vice-president and commercial manager, Southern Indiana Gas & Electric Co., Evansville, Ind., has been announced by F. B. Culley, president.

Mr. Brown graduated in 1923 from Montana State College and has been active in committee work with the Indiana Gas & Electric Associations. In 1932 he was appointed superintendent of electrical production and in 1943 assumed the duties of general superintendent. He has general charge

of system electric and gas operations as well as all engineering and construction.

Mr. Graham began his utility career in 1922 with Springfield Light Heat and Power Co., Springfield, Ohio. In 1930 he was transferred to Southern Indiana Gas and Electric Company as commercial manager.

Mr. Graham is a director of the Indiana Gas and Electric Associations and a past-president of the latter organization. He is also a member of the American Gas Association All-Year Gas Air Conditioning Committee.

At a meeting on January 24 the following

three directors resigned from the company: Justin R. Whiting, New York; G. H. Boume, New York; J. A. Brown, Jackson, Michigan. They were replaced by Walter H. Dreier, Evansville; Kenneth H. Weyerbacher, Indianapolis, and Walter G. Koch, Evansville.

W. B. Tippy, New York, a vice-president but not a director, also submitted his resignation. These changes in personnel of the board were part of The Commonwealth and Southern Corporation's program to divest itself of common stock interest in Southern Indiana Gas and Electric Company.

Three manufacturers form AGE firm



L. C. Harvey

FORMATION of Affiliated Gas Equipment, Inc., with headquarters in Cleveland, Ohio, has been announced by Lyle C. Harvey, president and general manager.

The new organization brings together under single management, three pioneering firms in the gas heating and allied

fields, all of which previously were subsidiaries of Dresser Industries, Inc. These are Bryant Heater Co., Cleveland; Day & Night Manufacturing Co., Monrovia, Calif., and Payne Furnace Co., Beverly Hills, California. Five major producing plants are merged in this single organization and will manufacture a complete line of gas-fired equipment for both heating and water heating in the residential, commercial and industrial markets.

President Lyle Harvey, who is general manager and a director of AGE, is also general manager of the Bryant Heater Division. He is a past director and Advisory Council member

of the American Gas Association, as well as a director and past-president of the Gas Appliance Manufacturers Association.

Associated with Mr. Harvey are other names of importance in the gas industry and heating field. Philip W. Scott, formerly secretary-treasurer, Bryant Heater Co., occupies a similar post with the new AGE. W. J. Bailey, Jr., is also a vice-president and director of AGE while serving as general manager of the Day & Night Division. E. L. Payne, general manager Payne Furnace Division, is a vice-president and director of AGE.

Loomis made Michigan vice-president

NEWELL E. LOOMIS has been elected vice-president—sales manager, Michigan Consolidated Gas Co., Detroit, according to an announcement by William G. Woolfolk, chairman, and Henry Fink, president of the company.

Mr. Loomis, who has been sales and advertising manager for the Detroit district since 1932, will be in charge of sales and advertising for all districts of the company. He is one of the utility's oldest employees, having started as a stenographer in the "new business" department more than 40 years ago.

Since 1910, Mr. Loomis has served the company in various capacities including clerk in the coke department, secretary to the sales

and purchasing manager, superintendent of coke sales, and assistant sales manager.

Mr. Loomis is a former president of the Michigan Gas Association and an active member of the American Gas Association for 40 years. He is also a member of American Marketing Association, Public Utilities Advertising Association, and National Federation of Executives.



N. E. Loomis

Southern Counties appoints sales manager

FLOYD S. PARMENTER has been appointed to the newly created position of manager of sales, Southern Counties Gas Co., Los Angeles, Calif., according to an announcement by Vice-President Norman R. McKee. Mr. Parmenter will take over management of all appliance sales and collateral activities in the sales department.

Clyde H. Potter, formerly appliance sales manager, has been assigned to public relations

work under Vice-President McKee, with the title of special assistant.

Mr. Parmenter was employed by Southern Counties Gas Company in 1934 as a salesman in the then Monrovia District. He was transferred to the company's eastern division on December 8, 1941 as sales supervisor, retaining that position until 1945 when he became assistant manager of appliance sales. He is a member of the American Gas Association.

Union Gas president announced

HARRISON F. JOHNSON who has served approximately ten years as vice-president, Union Gas System, Inc., Independence, Kan., has been elevated to the presidency of that company succeeding the late Paul R. Johnson who died December 17, 1948.

The new president, a nephew of the late Mr. Johnson, graduated from the school of engineering at the University of Kansas in 1927. He spent the following three years with an engineering firm on construction of major pipelines in the Southwest. Between 1930

and 1936 he worked with the Canadian River Gas Co., Amarillo, Texas, on the pipeline from Amarillo to Denver.

Mr. Johnson joined Union Gas System, Inc., in 1936 and is a member of the American Gas Association.



H. F. Johnson

Millard, Kievenaar move up at Boston



N. R. Millard



H. A. Kievenaar

TWO ORGANIZATIONAL CHANGES in the sales department, Boston Consolidated Gas Co., has been announced by John J. Quinn, vice-president. Norman R. Millard, superintendent of domestic sales since October 1945, has been named superintendent of the company's promotional divisions. Henry A. Kievenaar, who has headed the

apartment-builder, dealer sales divisions since June 1946, will now add to his duties all other residential sales and district sales office activities.

Grouped in the promotional divisions are advertising, directed by Mrs. Beryl P. Kimball; display, directed by Harold R. Gleason; home service, directed by Susan A. Mack; and all sales training activities.

Frank D. Hackett will be assistant superintendent of the residential sales department, working with Mr. Kievenaar. W. J. Bourke and G. C. Schmidt will be district supervisors; David J. Lear, director of dealer sales; C. D. Goldrick, director of builder sales, and E. D. MacPherson, director of apartment sales.

Charles H. O'Donnell will continue as superintendent of the development divisions responsible for sales and appliance engineering.

Mr. Millard and Mr. Kievenaar are both members of the American Gas Association.

A.G.A. officer honored

D. A. HULCY, second vice-president, American Gas Association, and president, Lone Star Gas Co., Dallas, Texas, received further national recognition and a new title last month. In a February article entitled "The Dyadic Men of Dallas," *Fortune* Magazine photographed Mr. Hulcy in New York during a recent trip for Dallas.

The article described Mr. Hulcy as "the city's (Dallas') ace drummer. President of the Chamber of Commerce, he is also president, vice-president, director or trustee of 33 other civic boards. On the side he runs a large gas company."

Erhard joins Anderson Stove

A NEW EXPANSION PROGRAM aimed at increasing the distribution and sales of Anderson gas ranges was announced February 1 coincident with the appointment of Herbert C. Erhard as sales manager, Anderson Stove Co., Anderson, Indiana.

Mr. Erhard has been associated with the gas appliance business for more than 34 years. He has been active in the American Gas Association for many years as a member of the Food Service Equipment Committee, Industrial & Commercial Gas Section.

Philadelphia advances Jones

W. H. JONES, division superintendent, Philadelphia Electric Company at Morton, Pa., has been named purchasing agent for the utility.

Mr. Jones joined the company as a junior engineer following his graduation as a mechanical engineer from Cornell University in 1926. He later became, successively, gas superintendent and electric superintendent at Morton and division superintendent at Coatesville. He was transferred to the post of division superintendent at Ardmore in 1939, and has been division superintendent at Morton since 1943.

Elizabethtown promotes



Henry H. Rohrs

HENRY H. ROHRS, formerly assistant to the vice-president, was elected treasurer, Elizabethtown Consolidated Gas Co., Elizabethtown, N. J. on January 11.

Mr. Rohrs is a graduate in business administration of Lehigh University. He is an active member of the American Gas Association, and a director of the New Jersey Gas Association and the New Jersey Utilities Association.

Up to the time of his appointment as assistant to the vice-president, he was in charge of the company's house heating department.

Elizabeth Sweeney weds

ELIZABETH SWEENEY, a past chairman of the American Gas Association Home Service Committee, was married on January 29 to Dr. Leo John Herbert in New York City.

Currently household equipment editor, *McCall's Magazine*, Miss Sweeney was for a number of years director of home service for the Central New York properties of the Associated Gas & Electric System.

Dashiell honored



P. T. Dashiell

Mr. Dashiell is responsible for the initial development in the early 1920's which led to the general use of heavy oils in the manufacture of car-

THE HONORARY DEGREE of doctor of engineering has been awarded by Stevens Institute of Technology, Hoboken, N. J., to Philip T. Dashiell, consultant on synthesis and city gas processes for United Engineers & Constructors, Inc., Philadelphia.

Mr. Dashiell is responsible for the initial development in the early 1920's which led to the general use of heavy oils in the manufacture of car-

buretted water gas, one of the most important economic developments in the industry.

He has been awarded the American Gas Association's Beal Medal and Distinguished Service Award, and the Franklin Institute's

Walton Clark Medal. As first chairman of the A. G. A. Gas Production Research Committee, Mr. Dashiell directed the revitalized and enlarged production research activities under the industry's PAR program.

Distribution conference

(Continued from page 33)

equipment and tools, by G. B. Johnson, Minneapolis Gas Co., and W. C. Peters, Northern States Power Co., St. Paul, Minnesota.

G. E. Griffin, The Brooklyn Union Gas Co., will speak on demand metering; while P. G. Bruck, The Peoples Gas Light and Coke Co., will discuss standardization of service and riser. Final topic on the Tuesday morning program will be an analysis of current trends in "charge for service" practices, by J. M. McCaleb, Citizens Gas & Coke Utility, Indianapolis.

The Wednesday morning general session will open with a talk about effect on meters of a change to mixed or natural gas, by W. J. Menet, The Peoples Gas Light & Coke Company. A. D. Simpson,

Jr., United Gas Corp., Houston, will expound practical cathodic protection for gas distribution systems, and M. Anusiewicz, The Brooklyn Union Gas Co., will discuss gas conditioning.

Service trenchers will be discussed by R. B. Allen, Michigan Consolidated Gas Co., and training and upgrading of street department personnel, by H. M. Dwight, Southern California Gas Co., Los Angeles. An informative talk has been prepared by John MacLarty, Rochester Gas & Electric Corp., on "Service Training—The Orphan."

Final events of the Wednesday general session will be a talk on servicing "wrinkles," by J. J. Gagen, Consolidated Edison Co. of New York, Inc., and two composite films sponsored by F. J. Hall, Michigan Consolidated Gas Co., chairman, Subcommittee on Construction and Maintenance.

S.G.A. schedules short course for May

MORE than 200 engineers and industrialists from several states are expected to attend the fourth annual Short Course in Gas Technology sponsored by the Southern Gas Association. The course will be held at Texas College of Arts and Industries, Kingsville, Texas, from May 30 through June 1.

Dr. Frank H. Dotterweich, director of the college's engineering division, is again chairman of the administrative committee. Working with him in planning the course are the following: Chester Young, Lone Star Gas Co., Dallas, chairman of the utilization sec-

tion; D. T. MacRoberts, United Gas Pipe Line Co., Shreveport, La., chairman of the production and transmission section; W. B. Wood, Rio Grande Valley Gas Co., Brownsville, Texas; C. A. McKinney, United Gas Corp., Houston; R. H. Ulrich, Southern Natural Gas Co., Birmingham; W. C. McGee, Jr., Tennessee Gas Transmission Co., Houston; George Elmer May, New Orleans Public Service Inc., New Orleans; R. M. Hutchinson, Houston Natural Gas Corp.; W. H. Ligon, Nashville, S. G. A. president; R. R. Suttle, Dallas, S. G. A. managing director.

Texas Mid-Continent Oil & Gas meetings

THE Texas Mid-Continent Oil & Gas Association has announced a three-year schedule for its annual meetings with the 1949 session set for Houston, Texas, October 13 and 14. Headquarters for the meeting will be at the Rice Hotel.

The association's 1950 meeting will be held in Dallas on October 4 and 5, while the 1951 meeting is scheduled to be held in Beaumont.

Southern gas men to convene in Biloxi

NUMEROUS panel discussions with nationally known authorities participating will be a feature of the forty-first annual convention of the Southern Gas Association in Biloxi, Miss., April 20-22, according to W. H. Ligon, president of the association and president, Nashville Gas & Heating Co., Nashville, Tennessee. Extensive study of the latest trends in commercial and consumer use of gas fuel will be emphasized.

R. A. Puryear, Jr., vice-president, Alabama Gas Co., Birmingham, has been appointed general convention chairman. L. L. Peters, American Stove Co., Atlanta, Ga., and J. H.

Wimberly, executive vice-president, Houston Natural Gas Corp., Houston, Texas, will be vice-chairmen.

Sales sessions will be headed by J. M. Lynn, Jr., sales manager, Lone Star Gas Co., Dallas; operating sessions by Jeff H. Collins, Sr., superintendent of the gas department, New Orleans Public Service Inc.; and accounting sessions will be directed by J. B. Cookenboo, Houston Natural Gas Corporation. In charge of general sessions will be Mr. Ligon and L. L. Baxter, president, Arkansas Western Gas Co., Fayetteville, Arkansas.

Panels will be presided over by the following: home service—Thelma Holmes, Alabama Gas Co., Montgomery, and Mary Ellen Lauchlin, Oklahoma Natural Gas Co., Tulsa; advertising—Alta Evans, Southern Union Gas Co., Dallas; industrial sales—Ross Walker, United Gas Corp., New Iberia, La.; residential sales—J. D. Haverkamp, New Orleans Public Service Inc.; accident prevention—W. V. Smith, Oklahoma Natural Gas Co., Tulsa; corrosion—C. L. Morgan, United Gas Corp., Houston; transmission—Luther Tolbert, Lone Star Gas Co., Dallas.

G.A.M.A. meeting to cover vital issues

THE STATE OF TRADE nationally, what's ahead for the rest of 1949, selling in a buyers' market, and other industry issues will be appraised at the annual meeting of the Gas Appliance Manufacturers Association April 5-7 at the Broadmoor Hotel, Colorado Springs, Colorado. The 535 manufacturers also will discuss major merchandising plans and other projects planned by the various divisions of G.A.M.A., according to Frank J. Nugent, president of the association.

One of the highlights of the program will be the presentation of meritorious service awards to members in recognition of services they have rendered to the industry.

Sessions of G.A.M.A.'s 12 divisions will feature as speakers, industry leaders on major topics of vital interest to each division. The manufacturers are scheduled to meet in the main dining room of the Broadmoor each day for a combination luncheon and general session. Afternoon sessions will be devoted to a continuation of divisional meetings, if

necessary, personal conferences and recreational activities.

Frank C. Smith, vice-chairman, American Gas Association General Promotional Planning Committee, and president, Houston Natural Gas Corp., will address the manufacturers on "Par for the Course" at the opening general session luncheon after Mr. Nugent delivers the keynote message.

John A. Robertshaw, chairman of the nominating committee and president, Robertshaw-Fulton Controls, Inc., will report on the proposed slate of new officers at this session. John Van Norden, American Meter Co., will present the treasurer's report. Mr. Whitelaw will review the association's progress during the year and discuss future plans.

Robert W. Hendee, president, American Gas Association and Colorado Interstate Gas Co., will be the principal speaker at the Tuesday evening dinner session. His topic is "We Are All in It."

"CP" progress and promotion plans will

be revealed on Wednesday morning when Chairman A. B. Ritzenthaler presides at the conference of the executive committee of the "CP" manufacturers group.

"Operation Enterprise" is the theme of the Wednesday luncheon session. In the evening the meritorious awards will be presented.

On Thursday morning, the "Court of Flame" gas water heater promotion campaign will be discussed by Leland M. Feigel, chairman of the division, and Stanley C. Gorman, sales promotion director of the division.

George H. Richards, legal counsel for G.A.M.A., will talk at the Thursday luncheon session. "Broad Aspects of Marketing" is the subject at the same session of R. T. Kilian, Bryant Heater Co., chairman of the Marketing Committee. Charles G. Warwick, Ruud Manufacturing Co., and chairman of the Traffic Committee, will speak on "You Pay the Freight."

Many issues head N.E.G.A. program

SIXTEEN PRESENTATIONS covering subjects of broad general interest will be featured at the twenty-second annual business conference of The New England Gas Association at the Hotel Statler, Boston, on March 24 and 25. J. A. Hiller, sales manager, Portland Gas Light Co., Portland, Me., and N.E.G.A. second vice president, is chairman of the program committee.

Thursday morning highlights will include election of officers and directors, the annual report of Executive Secretary Clark Belden, and three feature addresses. Nicholas E. Peterson, vice-president, The First National Bank of Boston, and editor, *New England Letter*, will speak on business trends and outlook. E. G. Twohey, vice-president, Worcester County Electric Co., will deliver the president's address, and Robert W. Hendee, president, American Gas Association and Colorado Interstate Gas Co., will speak on "We're all in it together."

Thursday afternoon speakers will include E. P. Noppe, general consultant, Ebasco Services Inc., on fuel reserves and trends, and E. S. Pettyjohn, director, Institute of Gas

Technology, Chicago, on the economic implications of new production processes.

Another full agenda has been arranged for Friday. H. W. Doering, manager, house heating and air conditioning department, Springfield Gas Light Co., will discuss selling air conditioning in New England, while competitive merchandising developments will be described by C. George Segeler, utilization engineer, American Gas Association.

Community relations is the topic selected by J. E. Drew, associate director of public relations, Lever Brothers Co., Cambridge. Another well-known industry speaker, William B. Hewson, assistant to president, The Brooklyn Union Gas Co., and second vice-president, Public Utilities Advertising Association, will talk on 1949 advertising policies.

On Friday afternoon the principal gas industry speaker will be Frank J. Nugent, president, Gas Appliance Manufacturers Association, and sales promotion manager, Bryant Heater Co., Cleveland. Labor developments and the utilities will be discussed by Dr. Leo Wolman, professor of economics at Columbia University.



Program committee discussing plans for 1949 Gas Measurement Short Course: (Left to right) M. D. Gilbert, Tulsa; J. W. Sanders, Eldorado, Ark.; E. L. Stark, Dallas; James L. Griffin, Omaha; T. S. Whitis, Amarillo; Kate A. Niblack, Oklahoma City; C. E. Terrell, Birmingham, Ala.; W. H. Carson, Norman, Okla.; W. A. Brewster, Shreveport, La.; W. H. Woods, Houston; B. F. Worley, Shreveport; George E. Greiner, Bartlesville, Okla.; Earl Kightlinger, Shreveport, and Dean Bruce, Tulsa.

Associated organization activities

Gas measurement short course announced

A TOTAL of 68 specialized classes covering all phases of gas measurement regulation and related work will be held during the 1949 Southwestern Gas Measurement Short Course at the University of Oklahoma, April 12-14, according to W. H. Woods, chairman of the Program Committee. The principal address will be delivered by C. T. Chenery, chairman of the board, Southern Natural Gas Co., Birmingham, Alabama.

W. A. Brewster, chairman of the Exhibits Committee, has announced that 30 manufacturers will sponsor educational exhibits for the short course. The committee for the study of practical methods, headed by G. E. Greiner, will make available for distribution a pamphlet entitled "Condensed Outline of Supercompressibility Determination Methods."

As chairman of the General Committee, C. E. Terrell has stated that prizes ranging from five to 25 dollars will be awarded to the authors of winning papers on the subject, "What I Learned at the Gas Measurement Short Course."

Proceedings of the 1949 short course will be printed in bulletin form.

Gas house heating

(Continued from page 16)

to the furnace of such an average customer of 320.7 cu. ft. per hour of gas having a heating value of 520 B.t.u. per cu. ft. (equivalent to a heat input of 166,764 B.t.u. per hour).

Allowing for losses in the furnace, the capacity of the heater for the average customer will thus be close to 40 percent in excess of the calculated radiation loss. This fact, although of little importance in connection with the numerical values of production demands and gas consumption, is of considerable significance in regard to the magnitude of distribution demands reflected by the tests, as well as the associated load and coincidence factors.

Chart 3 shows the seasonal variation in the maximum demands, gas consumption and related factors for the average of the group of 80 customers tested. The following important features are revealed by these results:

(1) The magnitude of the monthly group maximum production demands changes from month to month, seemingly in accordance with the change in monthly degree-days.

(2) The magnitude of the monthly group maximum half-hour distribution demand changes from month to month too, but not to the same extent as the group maximum production demand, and the change is also seemingly related to the monthly degree-days.

(3) The monthly consumption appears to be very closely related to the monthly degree-days. As a matter of fact, the monthly and annual consumption per degree-day are fairly stable factors throughout the year, except for the months at the beginning and the end of a heating season when they depart substantially from those of the other months and of the entire year. This departure is due primarily to the relatively large amount of gas used by the pilot in comparison with that used by the main burner itself in these months, because of the relatively small amount of degree-days present.

(4) The annual production demand coincidence factor is 98 percent, indicating almost a complete lack of diversity for the *maximum day* requirements of the individual gas house heating installation.

(5) The annual distribution demand coincidence factor is about 67 percent,

indicating the existence of some diversity in the *maximum half-hour* requirements of the individual gas house heating installations. But it should be noted that the significance of this factor must be viewed in the light of many conditions contributing to its formation. Margins provided in the hourly capacity of heaters; the manner in which human beings choose to operate them, whether at a constant temperature setting of the house thermostat throughout the entire day or whether at one setting during daytime and at a lower one at night, and the outdoor temperature which exists at the time of occurrence of the group maximum distribution demand. All these conditions and others have a definite bearing upon either the magnitude of the customers' non-coincident or on their group maximum distribution demands, or on both, which in turn influences the magnitude of the annual coincidence factor of this load.

Analytical relationships

Main value of any load research project is to secure knowledge which would enable one to foresee or predict the effects of changing conditions upon the physical or economic features of the service supplied. With a load such as that of gas house heating whose characteristics depend so much upon climatic conditions, with the outdoor temperature as the major controlling factor, it is essential to establish certain probable relationships between load characteristics and this controlling factor. This can be done through an analytical study of the test results, the most essential feature of such a load research project.

The following charts will illustrate the existence of such average relationships between the more important characteristics of the house heating load and the outdoor temperature. An indication will be made of the significance in their trends and a demonstration given of their application in comparison with actual test results.

Chart 4 depicts two such average relationships, one between daily degree-days and the corresponding production demands, the second between these degree-days and the daily group maximum half-hour distribution demands. These relationships show that the production demands of the house heating load increase directly with daily de-

gree-days (from 65° F base) for substantially the entire range of outdoor temperatures.

The daily group maximum distribution demands increase too with the degree-days, but the increase is at a constantly decelerating rate, so that its rate of change for outdoor temperatures above a 35 degree-day is less than one-half its rate of change below that temperature deficiency. The importance of this fact should be borne in mind when evaluating either the significance of the house heating test load data or the economics of gas service supply for that class of load.

Chart 5 depicts the average relationships between group half-hour distribution demands and hourly outdoor temperatures for specified times of the day. These data were developed by grouping demands for the same temperature occurring at each of the specified times of the day in nominal 5° F increments, each multiple of five degrees including temperatures of two degrees on either side of the nominal group value.

The demands for each of the temperature groups thus obtained were arranged and plotted for each specified time of day for the entire range of temperatures available. A smooth curve drawn through the plotted points established the trend of the desired relationship.

It will be observed that these average relationships fall into three major categories which for convenience of presentation are divided into four periods of the day: the morning or the peak period, the afternoon, the evening, and the night.

The three major categories depicted by the relationships are: those that are substantially linear in nature, occurring in the afternoon and evening period; those resembling hyperbolas, occurring at night and in the very early morning periods, and the more complex and irregular ones which occur in the morning during the peak periods and are characterized by a lower rate of change in the distribution demands in the region below 30° F of outdoor temperature, as compared with their rate of change in the region above that temperature.

Chart 6, Figure 1, depicts the relationships which outline the average contours of load curves for days of different mean or average outdoor temperatures. These data were developed

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in a manner similar to those used in developing information shown in Chart 5, except that the daily load curves were grouped by mean temperatures of each day, in nominal 5° F increments, each multiple of five degrees including temperatures of two degrees on either side of the nominal group value. The load curves for each of the temperature groups thus obtained were averaged. Groups with nominal temperatures of multiples of 10° F are shown in Figure 1.

Figure 2 shows daily load curves for hypothetical days for the indicated values of constant hourly outdoor temperatures which were synthesized from the relationships established in Chart 5.

Trends reflected

It is of interest to note that the actual curves on a mean daily outdoor temperature basis, broadly speaking, reflect the fundamental trends depicted by the synthetic curves reflecting theoretical conditions of absolutely constant hourly outdoor temperatures.

These trends are unmistakable: As the daily mean outdoor temperatures decrease, the entire load curve rises, retaining its general shape but with a progressively increasing daily load factor, down to a temperature of around 30° F.

Below that temperature it continues to rise with a further decrease in temperature, but its relative rise around the peak period is not as rapid as elsewhere in the day. Thus its shape changes materially from that obtained below an average temperature of 30° F. This results in an acceleration of the progressive increase in the daily load factor. It may be theorized that at some very low temperature, the daily load factor may become one hundred percent.

Chart 7 shows two sets of daily load curves for two significant days of the test period, depicting a comparison between the actual load curves obtained from the tests and the derived curves, synthesized through the application of the distribution demand versus outdoor temperature relationships shown in Chart 5, to the actual hourly temperatures recorded for these days. It will be noted that, by and large, the derived curves fit the actual curves well over the entire day, especially during its significant periods.

The information presented in this paper of necessity depicts the results of load research on the characteristics of the gas house heating load for one utility, operating in a suburban territory of a metropolitan area of this country. It is hoped that other gas companies throughout the country will undertake similar research projects.

Results of sampling tests acquire the greatest significance, reliability and practical value to individual systems and the industry at large, through a comparison and correlation of the results of many individual research activities.

Authentic knowledge of customers' load characteristics, and of their behavior under varying conditions which control them, is essential for an intelligent administration of engineering, operating, pricing and managerial policies of gas service supply. Such knowledge is fundamental to the continued progress and well-being of the gas industry.

GAS HOUSE HEATING CENTRAL FURNACE SYSTEMS (PHYSICAL CHARACTERISTICS FOR THE AVERAGE) OF A GROUP OF 80 CUSTOMERS TESTED DURING THE 1946-47 HEATING SEASON

Volume of heated area—cu. ft.	14,853
Radiation losses by standard ASHVE formula for 70° F differential— B.t.u. per hour	90,273
Measured input to furnace (including pilot) Cu. ft. per hour	320.7
B.t.u. per hour	166,764
Measured input to pilot Cu. ft. per hour	6.7
B.t.u. per hour	3,484
Type of houses—in percent of total Row house	13
Semi-detached house	30
Detached house	57
General size of house—in percent of total Small	41
Medium	33
Large	26
Height of house—stories	2.5
Number of rooms in dwelling unit (including bath)	9.2
Type of heating system—in percent of total Warm air	27
Hot water	69
Steam	4
Normal setting of thermostat—°F Day	70.4
Night	65.0
Thermostat operation—in percent of total Manual	34
Automatic	66



1949

MARCH

14-15 •A. G. A. Eastern Natural Gas Regional Sales Conference, Residential Gas Section, William Penn Hotel, Pittsburgh, Pa.

17-18 •Oklahoma Utilities Association annual convention, Hotel Tulsa, Tulsa, Okla.

24-25 •New England Gas Association, annual meeting, Hotel Statler, Boston, Mass.

28-30 •A. G. A. Mid-West Regional Sales Conference, Residential Gas Section, Edgewater Beach Hotel, Chicago, Ill.

March 31-April 1 •A. G. A. Conference on Domestic Research and Utilization, Hotel Statler, Cleveland, Ohio

APRIL

4-6 •A. G. A. Distribution, Motor Vehicle and Corrosion Conference, Netherland Plaza Hotel, Cincinnati, Ohio

5-7 •A. G. A. Sales Conference on Industrial and Commercial Gas, Andrew Jackson Hotel, Nashville, Tenn.

5-7 •G. A. M. A. annual meeting, Broadmoor Hotel, Colorado Springs, Colo.

10-12 •Gas Meters Association of Florida-Georgia Annual Meeting, Ponce de Leon Hotel, St. Augustine, Fla.

11-13 •A. G. A.-E. I. Spring Accounting Conference Hotel Book-Cadillac, Detroit, Mich.

11-13 •Mid-West Gas Association, forty-fourth annual convention, Hotel Fort Des Moines, Des Moines, Iowa

12-14 •Southwestern Gas Measurement Short Course, College of Engineering, University of Oklahoma, Norman, Okla.

20 •Southern Gas Association, Home Service Workshop, Biloxi, Miss.

20-22 •Southern Gas Association, annual convention, Buena Vista Hotel, Biloxi, Miss.

22 •The Maryland Utilities Association, annual meeting, Lord Baltimore Hotel, Baltimore, Md.

28-29 •Indiana Gas Association, annual convention, French Lick Springs Hotel, French Lick, Ind.

MAY

9-10 •A. G. A. Natural Gas Department Spring Meeting, French Lick Springs Hotel, French Lick, Ind.

9-13 •A. G. A. Industrial Gas School, Hotel Severin, Indianapolis, Ind.

17-19 •Pennsylvania Gas Association, annual convention, Galen Hall, Wernersville, Pa.

23-25 •A. G. A. Production and Chemical Conference, Hotel New Yorker, New York, N. Y.

Personnel service

SERVICES OFFERED

Eastern Sales Executive—With 20 years of outstanding results selling utilities, wants connection representative manufacturer of equipment for production, distribution or utilization of gas. Top references. 1600.

Tax Accountant—15 years extensive experience in tax problems. Past five years exclusively with natural gas and oil working at top level in setting tax procedures and policies. Ability to work with personnel at all levels to produce efficient results. Location unimportant but desire southwest. Married. (38). 1601.

Controller, Treasurer, Accounting and Financial Executive—Last four years Secretary-Controller Head Finance Division \$80,000,000 utility. Previously eighteen years large utility system from Accountant to Assistant Controller of holding company. Relations with present employer excellent. Present salary \$11,000. Graduate St. Lawrence University. Major economics. 1602.

Selling to dealers and gas companies, with headquarters in Cincinnati representing high grade gas range lines or, **sales manager** in Cincinnati district with A1 rated bottled gas company. 1603.

Salesman—Seeking position as Manufacturer's representative for gas ranges, space heaters and sundry equipment. Twenty years experience in wholesale and retail selling. Prefer lower New England, New York and Long Island territory on salary and commission basis. Can furnish own car; references. 1605.

Sales Manager—Graduate engineer, over 20 years

in sales promotion of house heating and commercial gas appliances. Including servicing as well as selling for appliance manufacturers and utilities. 1606.

Sales Representative—7 years experience selling and specifying major gas appliances wholesale and retail gas, heat, water heat, etc. Sold Utility companies and trade. Vicinity New York City. Married. References available 1607.

Would be interested in an interview with manufacturer to represent them in the metropolitan area of New York, on house heating, industrial or domestic. 1608.

Manager-Engineer—Extensive training and experience in all phases of manufactured gas operations—management, production, distribution, service, sales, rates, labor relations, etc. Also experience in natural gas and propane-air gas. 1609.

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A confidential service available to members, whereby those seeking men and those seeking positions may be brought together. In addition to the advertisements which appear in these columns, information filed on the regular confidential qualification form will be utilized for the benefit of companies seeking the services of executives, engineers, operators, salesmen and others.

A.G.K.

POSITIONS OPEN

Experienced Corrosion Engineer for electrolysis and corrosion mitigation work with large midwest Gas Company. Please write full details. 0545.

Assistant Superintendent—Production—Eastern Utility 22,000 M cubic feet water gas plant. To handle plant operation, maintenance and construction. Should be graduate engineer experienced in heavy oil operation. \$7,500 per year to start. Rapid advancement and responsibility assured. Five years or more gas well experience essential and under 45 years of age. Give qualifications in detail and age. 0546.

Home Service Directors—For employment with leading Liquefied Petroleum Gas marketing company with district offices in Indiana, Illinois, Kentucky, Ohio, Michigan, Pennsylvania, New York, New Jersey, and Maryland. Requires 16 experienced home service directors age 25 to 40 years. Choice of location. Company reply with photograph and full qualifications. Our employees know of this offer. 0547.

Young technical graduate (not over thirty) with some experience in water gas production and distribution. Splendid opportunity assisting in supervision of production, distribution, and industrial gas applications. Location, Southern New England. Replies confidential. State of experience, education and personal data. 0548.

Arizona public utility seeks experienced engineer with executive ability for distribution system design, load forecasting and associated subjects. Permanent position and excellent opportunity. Give details. 0549.

Laboratories push

(Continued from page 22)

and Russell R. Rausch. Mr. Kane and Mr. Anthony are graduate chemical engineers of Case Institute of Technology and University of Oklahoma respectively. As a team this group is making surveys of the industry's projected research needs in the fields of ignition, combustion and removal of combustion products.

Current industrial and commercial gas research projects are being handled by Louis V. Cachat, Karl L. Badger and Earl A. McGee. Mr. Cachat of John Carroll University, and Mr. Badger of Fenn College, are chemical engineering graduates. Mr. McGee holds a B.S. degree in physics from Baldwin-Wallace College. These three men are investigating the application of power burners to commercial cooking equipment and the application of small gas glow tubes to industrial furnaces. They also are conducting a review of design factors influencing commercial gas counter appliances.

Receptionist and stenographer for the research department is Marguerite E. Heilbronn. Edwin L. Hall, Labora-

tories director, and K. R. Knapp, assistant director, supervise the over-all phases of Laboratories research.

A. G. A. utilization research is regarded as "profit research." All projects are carefully evaluated as to anticipated benefits to the industry, timeliness and other factors, by the two sponsoring committees that "screen" each new proposal. These are the Com-

mittee on Domestic Gas Research, R. J. Rutherford, Worcester Gas Light Co., Worcester, Mass., chairman, and the Committee on Industrial and Commercial Gas Research, Lester T. Potter, Lone Star Gas Co., Dallas, chairman. Technical advisory groups assist in preliminary technical studies and in reviewing material and reports as the projects progress.

Orifice meter project initiated

Benefits to the gas industry through improved accuracy of orifice meters are anticipated as the result of a new project approved by the PAR Committee of the American Gas Association. The work is designed to develop further information on the installation requirements of orifice meters with particular attention to the effects on measurement of plug valves, globe valves, elbows between valve and orifice, size of pipe in orifice meter runs and pipe roughness.

Entitled, "Investigation of Installation Requirements of Orifice Meters," the new project is sponsored by the Technical and Research Committee of

the A. G. A. Natural Gas Department, E. F. Schmidt, Lone Star Gas Co., Dallas, chairman. Work will be done by the joint A. G. A.—A. S. M. E. Committee on Orifice Meters. Three test locations have been selected: the naval boiler and turbine laboratory at the Philadelphia Navy Yard; the Rockville, Md. measurement station of Virginia Gas Transmission Corp., and the hydraulics laboratory, National Bureau of Standards, Washington, D. C.

During the first year, approximately \$8,000 will be expended on the project which is the ninth natural gas research study approved by the PAR Committee.

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